MAIN FILE

LDEQ RECEIPT
2016 JUN 10 AM 11:15

137 Northpark Blvd. • Covington, LA 70433
TELEPHONE (985) 276-6100 • FAX (985) 276-6279

June 10, 2016

original to JOA
copy to Petro/Zhang
PAPER

HAND DELIVERED

Mr. Donald Trahan, Administrator
Louisiana Department of Environmental Quality
Office of Environmental Services
Permits Division
602 N. Fifth Street
Baton Rouge, Louisiana 70802

RECEIVED
JUN 10 2016
By

Re: LOOP, LLC – Port Complex
Title V Minor Modification Application
Permit Nos. 1560-00027-V1 and PSD-LA-796
Agency Interest No. 4634
Lafourche Parish, Louisiana
PER20160001

Dear Mr. Trahan:

LOOP LLC – Port Complex (LOOP) is hereby submitting the enclosed Title V Minor Modification Permit Application for the Clovelly Dome Storage Tank Project. The initial application for this project was submitted in December 2014 and Title V Permit No. 1560-00027-V1 and PSD Permit No. PSD-LA-796 were subsequently issued in July 2015. This application proposes to revise the project by adding an additional five tanks, increasing the number of annual tank cleanings to two, and proposing control for tank cleaning activities.

As required by the Louisiana Department of Environmental Quality (LDEQ), LOOP is submitting three copies of this permit application. A check in the amount of $1,676.00 (Fee Code 1364) is also included to cover the review fees. LOOP is also submitting a request for Expedited Permit Processing with this application.

If you have any questions or require additional information, please contact me at 985-276-6299 or Kerry Brouillette of CK Associates at (225) 755-1000.

Sincerely,

Cynthia A. Gardner-Leblanc
LOOP LLC
Manager Regulatory Affairs

Enclosure
cc: Kerry Brouillette, CK Associates (without enclosure)

Monday, June 13, 2016
10:49:46 AM

RECEIPT OF CHECK

Master AI #:	4634
Name on Check:	Loop LLC
Master File Name:	LOOP LLC - Deepwater Port Complex
Check Received Date:	6/10/2016
Check Date:	6/10/2016
Check Number:	622224
Check Amount ($):	$1,676.00
Staff Entry:	SUNSHINEM
Date data entered:	6/13/2016
Media:	AIR
Reason:	Modification

Comments:

Title V Permit Minor Modification Application

Clovelly Tank Facility

Crude Oil Storage Tank Project

LOOP LLC – Port Complex

Galliano/Leeville, Louisiana

Lafourche Parish

Agency Interest No. 4634

Application for Permitted Project - December 2014

Additional Information - April 2015

Application for Modified Project – June 2016

Prepared by:

CK Associates
Environmental Consultants

17170 Perkins Road
Baton Rouge, LA 70810
225-755-1000

CK Project Number: 11465

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

SECTION 1

INTRODUCTION

1.0 Introduction

The LOOP LLC – Port Complex (LOOP) currently operates under Title V Permit No. 1560-00027-V1 and PSD-LA-796, issued July 30, 2015. The current permits approved the Clovelly Tank Facility Crude Oil Storage Tank Project (Project). LOOP is submitting a Title V Permit Minor Modification Application to propose a modification to this project. LOOP is a major source of criteria pollutants and a minor source of LAC 33:III.Chapter 51 Toxic Air Pollutants (TAPs).

1.1 Facility Description

LOOP is located in Lafourche Parish, Louisiana and the Gulf of Mexico. The LOOP Port Complex consists of the Clovelly Dome Storage Terminal (Terminal) in Galliano, the Small Boat Harbor in Leeville, the Fourchon Booster Station in Leeville, and the Marine Offloading Terminal in Grand Isle Block 59, Gulf of Mexico. Figure 1 depicts the site locations of the three (3) land-based facilities relative to each other. The Terminal consists of nine (9) underground storage caverns and 15 operational aboveground storage tanks. The caverns and tanks provide storage for oil prior to pipeline delivery. Eight of the caverns have a capacity of approximately 6.7 MMbbls of oil, and one cavern has a capacity of approximately 4 MMbbls of oil. The combined storage tanks have a capacity of 9 MMbbls (the 15 operational tanks).

The Terminal also consists of surface facilities located in the same general vicinity which include a Brine Storage Reservoir, Operations Building, fuel and slop oil tanks, emergency electric generators, and ancillary equipment. The Small Boat Harbor, located on Bayou Lafourche, shelters crew and work boats and includes hose testing facilities. The Fourchon Booster Station is a secured unmanned facility with two large diesel storage tanks and a few small storage tanks. Emission control systems utilized at the LOOP facilities include the latest storage tank technology, mechanical seals on pumps, and low sulfur fuel oil.

1.2 Project Description

With the December 2014 Title V and PSD Application, LOOP proposed to expand its Clovelly Dome Storage Terminal to include six (6) additional crude oil storage tanks, each having a capacity of 371,000 bbl. The project was approved with the issuance of Title V Permit No. 1560-00027-V1 and PSD Permit No. PSD-LA-796.

Due to the proposed addition of tanks in December 2014, a review of the basis for the emissions calculation for roof landing emissions was conducted; as a result, the emissions estimate was increased, based on an increase in the frequency of roof landings. An emissions estimate for tank cleanings was also proposed with the December 2014 project. Both of these activities were approved with the issuance of the July 2015 permits.

With the current application, LOOP is proposing to add an additional five (5) crude oil storage tanks, one (1) with a capacity of 371,000 bbl and four (4) with a capacity of 600,000 bbl. All eleven (11) new tanks will be external floating roof tanks (EFRs). The 371,000 bbl tanks are 243 feet in diameter whereas the 600,000 bbl tanks are 310 feet in diameter. The overall tank capacity will be increased from 9 MMbbl (15 operational tanks) to approximately 14 MMbbls (15 operational tanks plus 11 tanks proposed per the December 2014 and current applications). The throughput that is the basis of the emissions calculation for routine tank operation emissions is proposed to increase from 200 MMbbl/yr to 250 MMbbl/yr. Also with this application, LOOP is requesting the addition of one 500 KW diesel-fuel fired emergency electric generator and an associated diesel tank (insignificant activity) and that the tank cleaning emissions estimate be changed as follows: 1) base the emissions on two tank cleanings per year rather than one tank cleaning, and 2) control the VOC emissions with a portable thermal oxidizer. The portable thermal oxidizer has been proposed as a GCXVII activity. LOOP is not requesting additional roof landings as part of this modification.

Refer to Figure 2, Plot Plan for the location of the 11 tanks proposed per the December and current applications. See Table 1 below for a list of all tanks (permitted and proposed) that are part of the Crude Oil Storage Tank Cap.

Table 1
Storage Tanks CAP – Tank Permit Status

TEMPO ID	EPN	Description	Capacity (bbl)	Tank Permit Status
GRP0003	-	Crude Oil Storage Tank CAP (Clovelly Dome)	-	-
EQT0027	1-99	Tank 6401 (Clovelly Dome)	600,000	Permitted
EQT0028	2-99	Tank 6402 (Clovelly Dome)	600,000	Permitted
EQT0029	3-99	Tank 6405 (Clovelly Dome)	600,000	Permitted
EQT0030	4-99	Tank 6406 (Clovelly Dome)	600,000	Permitted
EQT0031	6-02	Tank 6409 (Clovelly Dome)	600,000	Permitted
EQT0032	7-02	Tank 6410 (Clovelly Dome)	600,000	Permitted
EQT0033	8-07	Tank 6403 (Clovelly Dome)	600,000	Permitted
EQT0034	9-07	Tank 6404 (Clovelly Dome)	600,000	Permitted
EQT0035	10-07	Tank 6407 (Clovelly Dome)	600,000	Permitted
EQT0036	11-07	Tank 6408 (Clovelly Dome)	600,000	Permitted
EQT0037	12-07	Tank 6411 (Clovelly Dome)	600,000	Permitted
EQT0038	13-07	Tank 6412 (Clovelly Dome)	600,000	Permitted
EQT0039*	14-07	Tank 6413 (Clovelly Dome)	600,000	Deleted
EQT0040	15-07	Tank 6414 (Clovelly Dome)	600,000	Permitted
EQT0041*	16-10	Tank 6415 (Clovelly Dome)	600,000	Deleted
EQT0042	17-10	Tank 6416 (Clovelly Dome)	600,000	Permitted
EQT0043	18-10	Tank 6417 (Clovelly Dome)	600,000	Permitted
EQT0044*	19-10	Tank 6418 (Clovelly Dome)	600,000	Deleted
EQT0045*	20-10	Tank 6419 (Clovelly Dome)	600,000	Deleted
EQT0046*	21-10	Tank 6420 (Clovelly Dome)	600,000	Deleted
EQT0048	22-14	Tank 6413 (Clovelly Dome)	371,000	Permitted
EQT0049	23-14	Tank 6415 (Clovelly Dome)	371,000	Permitted
EQT0050	24-14	Tank 6418 (Clovelly Dome)	371,000	Permitted
EQT0051	25-14	Tank 6419 (Clovelly Dome)	371,000	Permitted
EQT0052	26-14	Tank 6420 (Clovelly Dome)	371,000	Permitted
EQT0053	27-14	Tank 6421 (Clovelly Dome)	371,000	Permitted
EQTTBD	28-16	Tank 6422 (Clovelly Dome)	371,000	Proposed
EQTTBD	29-16	Tank 6423 (Clovelly Dome)	600,000	Proposed
EQTTBD	30-16	Tank 6424 (Clovelly Dome)	600,000	Proposed
EQTTBD	31-16	Tank 6425 (Clovelly Dome)	600,000	Proposed
EQTTBD	32-16	Tank 6426 (Clovelly Dome)	600,000	Proposed

* Tanks previously permitted prior to the current permit and never constructed.

1.3 Crude Oil Storage Tank Cap

LOOP operations, under their initial Title V Permit No. 1560-00027-V0, included a numerical total volatile organic compound (VOC) emissions limit for the crude oil storage tank cap, which included routine tank operation emissions as well as landing and filling activities. A hypothetical operating scenario (throughput amount, frequency of roof landings) was used to estimate emissions from these tank activities. No separate limits were placed on routine operations or landing and filling activities. So long as the emissions limit for the cap was not exceeded, LOOP was considered to be in compliance with the Title V permit.

With the issuance of Title V Permit No. 1560-00027-V1, five Specific Requirements (SRs) were added to GRP0003, under LAC 33:III.509, Nos. 107 – 111 and the SR for the annual cap report was revised. Best Available Control Technology (BACT) requirements for routine operations is SR No. 107, for cleanings are SR Nos. 108 and 109, and for landings are SR Nos. 110 and 111. SR Nos. 108 and 111 contain numerical limits for cleaning and landings, respectively and SR No. 107 requires that separate calculations be kept on a rolling basis for these limits. In keeping with the previous flexibility within the cap as allowed in Title V Permit No. 1560-00027-V0, LOOP requests that SR Nos. 108 and 111 be removed from the permit and that SR No. 107 be revised to reflect only a rolling 12-month emission calculation based on the annual VOC emissions of the storage tank cap. This allows the facility to vary parameters (throughput and frequency of landings and cleanings) as operational requirements dictate within the constraints of the permit emissions for the cap.

The operating scenario that LOOP is proposing in this application is presented as an example only. In other words, there is a proposed overall Total VOC emissions estimate that is based on variables such as the annual throughput amount and the frequency of roof landings/cleanings. As previously granted by the LDEQ upon issuance of Title V Permit No. 1560-00027-V0, LOOP requests that the permit not contain any explicit throughput limits or limits on frequency of roof landings or degassing/cleaning. LOOP requests to have the flexibility to vary these parameters as operational requirements dictate under the constraints of the permit limit for the cap.

Note that the PSD permit does not contain numerical limits and BACT for storage tanks is determined as follows in the issued PSD Permit:

1) BACT is determined to be storage vessels equipped with EFRs to limit VOC emissions.
2) BACT is determined to be limiting the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event.
3) BACT is limiting the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during a tank cleaning.

1.4 Title V Permit Reconciliation

In addition to modifying the project, as previously described in this application, LOOP additionally proposes to reconcile the permit as follows:

- Remove EQT0013, EPN 19-78, Portable Diesel Generator (Clovelly Dome); this is a mobile source and is therefore not required to be permitted; and
- Modify the description of EQT0011, EPN 17-78 by removing "(Clovelly Dome)".

1.5 Proposed Emission Changes

This application and emissions estimates were prepared with the best data available at the time. Emissions calculations are located in Appendix A of this application binder.

Table 2 provides a history of the Crude Oil Storage Tank Cap VOC emissions over the initial permit and the current application request. This table demonstrates that the change in emissions due to the Clovelly Tank Facility Crude Oil Storage Tank Project would not change the PSD requirements of the project when considering the five additional proposed tanks together with the previously permitted addition of six tanks as represented in Title V Permit No. 1560-00027-V1.

Additionally, the table shows that the proposed modification of adding five additional tanks results in an overall decrease in facility VOC emissions as a result of proposing to control tank degassing and cleaning events.

Table 2
History of Crude Oil Storage Tank Cap VOC Emissions

VOC Limit TPY - Permit No. 1560-00027-V1					
	Existing Tanks (15 tanks)	New Tanks (6 tanks)	Roof Landings (90 per Year)	Degassing/Cleaning (1 uncontrolled event/yr)	Total
Total VOC	67.98	25.97	293.09	43.72	**430.75**
VOC Limit TPY - Permit Application					
	Existing Tanks (15 tanks)	New Tanks (11 tanks)	Roof Landings (90 per Year)	Degassing/Cleaning (2 controlled events/yr)	Total
Total VOC	67.98	48.59	293.09	1.54	**411.19**
Change in Emissions Due To Proposed Modification					
Total VOC					**-19.56**

SECTION 2

REGULATORY APPLICABILITY

2.0 Regulatory Applicability

Section 22 of the Application for Approval of Emissions of Air Pollutants (AAEAP) contains the federal and state air quality requirements for each point source that are proposed with this application. With the current application proposing a modified Clovelly Tank Facility Crude Oil Storage Tank Project, it is proposed that the cap (GRP0003 and CRG0002) will be modified to include five additional tanks. These regulations are discussed below.

2.1 Louisiana Administrative Code (LAC)

Chapter 21 Control of Emission of Organic Compounds

Chapter 21 addresses such activities as control of emissions of organic compounds from storage tanks, fugitives, and best practical housekeeping and maintenance practices of organic compound emissions.

LOOP complies with all applicable provisions of this Chapter in a timely and forthcoming manner.

2.2 New Source Performance Standards (NSPS)

NSPS Subpart A General Provisions (40 CFR Part 60.1)

This subpart contains general notification, recordkeeping, and monitoring requirements that apply to any source subject to any NSPS regulation, unless the NSPS regulation specifically exempts the source from the provisions of this subpart.

LOOP complies with all applicable provisions of this Chapter in a timely and forthcoming manner.

NSPS Subpart Kb Standards of Performance for Volatile Organic Liquid Storage Vessels (Including Petroleum Liquid Storage Vessels) for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 (40 CFR Part 60.110b)

The existing crude oil storage tanks, permitted under the existing tank cap (GRP003) are subject to this subpart, as will be the eleven (11) new tanks. Each proposed crude oil storage tank is equipped with an EFR that meets all of the requirements of Subpart Kb.

2.3 Prevention of Significant Deterioration (PSD) (LAC 33:III.509 and 40 CFR 52)

The requirements of LAC 33:III.509 (PSD) apply to the major modification of any existing major stationary source. The LOOP LLC – Port Complex is an existing major stationary source.

According to LAC 33:III.509.A.4.a, a project is a major modification for a regulated new source review (NSR) pollutant if it causes two types of emissions increases – a significant emissions increase and a significant net emissions increase, as defined in LAC 33:III.509.B. The initial Clovelly Tank Facility Crude Oil Storage Tank Project resulted in a significant increase of VOC and underwent PSD permitting, resulting in the issuance of PSD Permit No. PSD-LA-796 on July 30, 2015. The current proposed project is a modification of the previous project and adds five additional EFR crude oil storage tanks. The proposed tanks in this application are being treated as if they were applied for in and approved in the current Title V and PSD permits and this application contains all such requirements of PSD permitting. However, as shown previously in Table 2, the project as proposed in this application results in a decrease in site VOC emissions and results in a minor modification to the existing permits.

Emissions for the Clovelly Tank Facility Crude Oil Storage Tank Project (for the pollutants triggering PSD review) are set forth in the table below. Amounts are listed in tons per year (TPY). Table 3 provides a summary of the tank cap emissions as a result of this request.

Table 3

PSD Analysis for Clovelly Tank Facility Crude Oil Storage Tank Project

Source	Pollutant	Current Permit Cap Emissions	Proposed Cap Emissions	Delta	PSD Significant Emissions Rate	PSD Review Required?
GRP0003	VOC	430.75	411.19	-19.56	40	No

Additionally, the project will not result in a significant emissions increase of any other regulated NSR pollutant.

SECTION 3
BEST AVAILABLE CONTROL TECHNOLOGY (BACT)

3.0 Best Available Control Technology (BACT)

The initial project underwent a BACT Analysis and the following was determined to be BACT per that analysis, as listed in PSD-LA-796:

1) BACT for Routine Operations of Storage Vessels; BACT is determined to be storage vessels equipped with EFRs to limit VOC emissions.
2) BACT for Floating Roof Tank Landings; BACT is determined to be limiting the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event.
3) BACT for Floating Roof Tank Cleanings; BACT is limiting the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during floating roof cleaning.

The modified project involves including an additional five EFR tanks, an additional tank cleaning, and controlling tank cleaning emissions with a portable thermal oxidizer. As shown below, LOOP proposes that the conclusions from the initial BACT Analysis remain, with one exception. LOOP proposes to control tank cleaning emissions with a portable thermal oxidizer with a control efficiency of 98%. The initial project BACT determination for the proposed tank cleaning was no additional control.

3.1 BACT for Routine Operations of Storage Vessels – VOC

For BACT for Routine Operations of Storage Vessels, LOOP proposes that the approved BACT Analysis remain the same: BACT is determined to be storage vessels equipped with EFRs to limit VOC emissions.

The initial project and BACT Analysis involved 371,000 bbl tanks; the modified project includes 371,000 bbl and 600,000 bbl tanks. The annual emissions estimate is similar for both size tanks and therefore would have minimal effect on the initial BACT Analysis.

With regard to the use of a closed vent system and control device, this option was eliminated in the original BACT Analysis based on a cost that exceeded $100,000 per ton controlled. The cost of the control device is relatively the same; thus the minimal difference in emissions minimally affects the calculation of the lb/ton controlled. The cost to employ a closed vent system and control device continues to exceed $100,000/ton

controlled. Therefore, LOOP continues to propose that this option is economically infeasible.

With regard to the use of an internal floating roof (IFR), this option was eliminated in the initial BACT Analysis based on a cost that exceeded $75,000 per ton controlled. The cost of adding an IFR to the smaller tanks was deemed economically infeasible; the cost of adding an IFR to a larger tank would also be economically infeasible when considering just the cost of the required steel to construct the roof. Again, there is a minimal difference between IFR and EFR tanks with regard to the annual emissions estimate. The cost of implementing an IFR for the proposed tanks continues to exceed the accepted cost per ton controlled; therefore, LOOP proposes that this option remains economically infeasible.

3.2 BACT for Floating Roof Tank Landings – VOC

For BACT for Floating Roof Tank Landings, LOOP proposes that the approved BACT Analysis remain as is since there are no changes to this activity with the modified project. LOOP is not proposing additional tank landings with this application.

BACT is determined to be limiting the time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) during each roof landing event.

3.3 BACT for Floating Roof Tank Cleanings – VOC

For BACT for Floating Roof Tank Cleanings, LOOP proposes that the approved BACT Analysis remain as follows: BACT is limiting the amount of time between the cessation of pumping out product and the start of liquid heel and sludge removal from the tank floor during floating roof cleaning.

However, with this application, LOOP also proposes to control tank emissions during degassing and cleaning activities with a portable thermal oxidizer with a control efficiency of 98%. LOOP contracts third party suppliers to perform tank cleanings and will contractually require the use of a thermal oxidation device achieving a minimum 98% control efficiency.

SECTION 4
ADDITIONAL IMPACT ANALYSIS

4.0 Additional Impact Analysis

4.1 Growth Analysis

The proposed project should not result in any significant residential, commercial, or industrial growth outside the facility since existing, surrounding establishments will likely support any locally dependent construction and operation needs. Thus, no significant air quality degradation due to associated residential, commercial, or industrial growth is expected.

4.2 Air Quality Impact Analysis

Since there will not be any air emissions from associated growth resulting from the project, adverse ambient air quality impacts resulting from growth are not expected.

4.3 Soils and Vegetation Analysis

Since the projected ambient air concentrations of ozone are not significant, the project is not expected to adversely impact the soil and vegetation in the area surrounding the Clovelly Dome Storage Terminal.

4.4 Visibility Impact Analysis

Sources of air pollution can cause visible plumes if emissions of particulates and nitrogen oxides are sufficiently large. The proposed project will not cause an increase of particulates above the significant emission rate and there will be no increase in nitrogen oxides. Therefore, the proposed project will not cause visibility impairment in the area surrounding the site.

4.5 Class I Area Impacts

The Breton National Wildlife Refuge is approximately 60 miles from the Clovelly Dome Storage Terminal. As such a Class I area analysis is required. An Ozone Ambient Impact Analysis is presented in the next section to satisfy this requirement.

4.6 Ozone Impact Analysis

Provisions of 40 CFR 52.21, Prevention of Significant Deterioration (PSD) of Air Quality and LAC 33:III.509.I.5.a allow an exemption from ambient monitoring requirements for ozone if the following requirement is met.

Any net increase of 100 tons per year or more of volatile organic compounds or nitrogen oxides subject to PSD requires the performance of an ambient impact analysis including the gathering of ambient air quality data.

The proposed project-related emissions for this project are 235.91 tons per year of VOC. As such, an ozone impact analysis, including the gathering of ambient air quality data, has been conducted and is described below. There is no proposed increase in nitrogen oxides emissions.

Effective December 28, 2015, the primary NAAQS for ozone is an 8-hour average of 0.07 ppm. This value represents the annual fourth-highest daily maximum 8-hour ozone concentration, averaged over a three-year period.

To assess the impacts of the proposed project on the regional ozone level, LOOP utilized the background concentrations from the closest existing monitoring station located in Thibodaux, Lafourche Parish, LA (AQS Site ID: 22-057-0004). This monitoring station is approximately 38 miles north-west of the site location. It is operated and maintained by the Louisiana Department of Environmental Quality.

Since ozone is regarded as a regional issue, LOOP believes that the data from this monitoring station, by virtue of its location and proximity, is representative of the ozone level surrounding the LOOP facility. Also note that the prevailing wind from the site is toward this monitor (from the southeast).

4.7 Current Ozone Assessment

The following table summarizes the current ozone design value for this monitoring station as reported by the EPA (http://www.epa.gov/airtrends/values.html). As shown, the NAAQS for ozone is not exceeded and the area is currently classified as *in attainment*. In fact, all of Louisiana is classified as *in attainment* for ozone

with the exception of the Baton Rouge 5-Parish Ozone Nonattainment Area which is classified as *marginal nonattainment*.

Table 4
Current Ozone Design Value

AWS Site ID	Location	2012-2014 Design Value (ppm)
22-057-0004	Thibodaux, Lafourche Parish	0.068

4.8 Historical Trend Consideration

LOOP has reviewed historical ozone concentration data to determine if there are any noticeable trends of ambient ozone levels in the area surrounding the facility. This is intended to provide a general sense of whether the ozone levels in the affected area are or will be in danger of exceeding the standard based on past actual data and ozone level trends. The following table summarizes this data.

Table 5
Historical Ozone Concentration Data

	Ozone Design Values (ppm)									
AQS Site ID	2003-2005	2004-2006	2005-2007	2006-2008	2007-2009	2008-2010	2009-2011	2010-2012	2011-2013	2012-2014
22-057-0004	0.079	0.080	0.079	0.077	0.072	0.071	0.072	0.074	0.071	0.068

As shown above, there is a noticeable downward trend in the ambient ozone levels beginning from the 2003-2005 timeframe to the present. This trend shows overall positive movement in regard to ambient ozone concentrations from 2003 to the present.

4.9 Projected Emissions Relative to Existing Emissions

The LOOP facility is located in Lafourche Parish, Louisiana. This parish is designated as *in attainment* with regard to the 2015 8-hour ozone standard. The proposed project will result in VOC emissions of 235.91 tons per year which is above the PSD significance level of 40 tons per year and above the 100 tons per year threshold which requires this ambient impact analysis.

The following table provides a comparison of the proposed project-related emissions of VOC at the LOOP facility to the 2015 reported emissions from the surrounding parishes of the facility, including Lafourche Parish which is where the facility is located. This data was obtained from the LDEQ Emission Reporting and Inventory Center (ERIC) database.

Table 6
LOOP Project Emissions vs. 2015 VOC from Surrounding Parishes

Parish	Total VOC Emissions (tons)
Assumption	291
Jefferson	324
Lafourche	577
St. Charles	3,349
Terrebonne	434
St. James	1,413
St. John the Baptist	897
Surrounding Parish Total	7,285
LOOP Proposed VOC	235.91
LOOP Proposed VOC + Parish Total	7,520.91
Percent Increase	3.24%

As shown, the proposed project-related VOC emissions will only increase the existing total emissions within the surrounding area by approximately 3.24%.

4.10 Conclusion

LOOP has performed a qualitative analysis of emissions in the area surrounding the facility before and after the proposed project, as well as a review of the historic ozone levels at a representative ozone monitoring station. Based on the emissions associated with the project relative to the overall emission levels in the surrounding area, as well as the downward trend in ozone levels, LOOP believes that the proposed project will have no impact on ozone levels in and around the facility.

SECTION 5

APPLICATION FOR APPROVAL OF EMISSIONS OF AIR POLLUTANTS FROM PART 70 SOURCES

Department of Environmental Quality Office of Environmental Services Air Permits Division P.O. Box 4313 Baton Rouge, LA 70821-4313 (225) 219-3181	**LOUISIANA** **Application for Approval of Emissions of Air Pollutants from Part 70 Sources**	DEQ LOUISIANA

PLEASE TYPE OR PRINT

1. Facility Information [LAC 33:III.517.D.1]

Facility Name or Process Unit Name (if any) LOOP LLC – Port Complex	☒ All Process Units ☐ Process Unit-specific Permit
Agency Interest Number (A.I. Number) 4634	**Currently Effective Permit Number(s)** 1560-00027-V1
Company - Name of Owner LOOP LLC	
Company - Name of Operator (if different from Owner)	
Parent Company (if Company – Name of Owner given above is a division)	

Ownership:
Check the appropriate box.

☐ corporation, partnership, or sole proprietorship ☐ regulated utility ☐ municipal government

☐ state government ☐ federal government ☒ other, specify LLC

2. Physical Location and Process Description [LAC 33:III.517.D.18, unless otherwise stated]

What does this facility produce? Add more rows as necessary.
The LOOP LLC - Port Complex (LOOP) consists of the Clovelly Dome Storage Terminal in Galliano, the Small Boat Harbor in Leeville, the Fourchon Booster Station in Leeville, and the Marine Offloading Terminal in Grand Isle Block 59, Gulf of Mexico. LOOP is currently permitted to handle 200 MMbbls of crude oil per year through the Clovelly Dome storage tanks.

What modifications/changes are proposed in this application? Add more rows as necessary.
Please see Section 1 of the report text in this binder for a complete description of the modifications/changes that are proposed in this application.

Nearest town (in the same parish as the facility): Galliano

Parish(es) where facility is located: Lafourche

Distance To (mi):	215 Texas	250 Arkansas	65 Mississippi	125 Alabama
Latitude of Facility Front Gate:	29 Deg	27 Min	45 Sec	____ Hundredths
Longitude of Facility Front Gate:	90 Deg	18 Min	20 Sec	____ Hundredths
Distance from nearest Class I Area:	60	kilometers		

Add physical address and description of location of the facility below. If the facility has no address, provide driving directions. Add more rows as necessary.
LOOP LLC - Port Complex is located in Lafourche Parish, Louisiana.

☒ Map attached (required per LAC 33:III.517.D.1)
☒ Description of processes and products attached (required per LAC 33:III.517.D.2)
☒ Introduction/Description of the proposed project attached (required per LAC 33:III.517.D.5)

3. Confidentiality [LAC 33.I.Chapter 5]

Are you requesting confidentiality for any information except air pollutant emission rates? ☐ Yes ☒ No

If "yes," list the sections for which confidentiality is requested below. Add rows as necessary. Confidentiality requests require a submittal that is separate from this application. Information for which confidentiality is requested should not be submitted with this application. Consult instructions.

4. Type of Application [LAC 33:III.517.D]

Complete the appropriate column (1 or 2) that corresponds to the type of permit being sought. Check all that apply within the appropriate column.

Column 1	Column 2
☐ Part 70 General	☒ Part 70 Regular
☐ Renewal	☐ Renewal
Select one, if applicable: ☐ Entirely new facility ☐ Modification or expansion of existing facility (may also include reconciliations) ☐ Reconciliation only ☐ Individual emissions unit(s) addition	Select one, if applicable: ☐ Entirely new facility ☐ Significant modification or expansion of existing facility (may also include reconciliations) [LAC 33:III.527] ☒ Minor modification or expansion of existing facility (may also include reconciliations) [LAC 33:III.525] ☐ Reconciliation only
	NSR Analysis: PSD ☐ NNSR ☐

Does this submittal update or replace an application currently under review? ☐ Yes ☒ No

If yes, provide date that the prior application was submitted: _____

Select one if this application is for an existing facility that does not have an air quality permit:

☐ Previously Grandfathered (LAC 33:III.501.B.6)
☐ Previously Exempted (e.g., Small Source Exemption; LAC 33:III.501.B.2.d)
☐ Previously Unpermitted

5. Fee Information [LAC 33:III.517.D.17]

Fee Parameter: If the fee code is based on an operational parameter (such as number of employees or capital cost), enter that parameter here. _____

Industrial Category: Enter the Standard Industrial Classification (SIC) and North American Industry Classification (NAICS) Codes that apply to the facility.

Primary SICC: 4612 **NAICS Code:** 486110

Secondary SICC(s): _____

Project Fee Calculation: Enter fee code, permit type, production capacity/throughput, and fee amount pursuant to LAC 33:III.Chapter 2. Add rows to this table as needed. Include with the application the amount in the Grand Total blank as the permit application fee.

FEE CODE	TYPE	EXISTING CAPACITY	INCREMENTAL CAPACITY INCREASE	*SURCHARGES*				
				MULTIPLIER	NSPS	PSD	AIR TOXICS	TOTAL AMOUNT
1364	Minor	69 MMbbls	2.8 MMbbls	N/A	☐	☐	☐	$1,676
					GRAND TOTAL			$1,676

Optional **Fee Explanation:** Use the space provided to give an explanation of the fee determination displayed above. Using this area will help to avoid confusion.

Electronic Fund Transfer (EFT): If paying the permit application fee using an Electronic Fund Transfer (EFT), please include the EFT Transaction Number, the Date that the EFT was made, and the total dollar amount submitted in the EFT. If not paying the permit application fee using EFT, leave blank.

EFT Transaction Number	Date of Submittal	Total Dollar Amount
		$

6. Key Dates

Estimated date construction will commence: 9/2016 *Estimated date operation will commence:* 3/2017

7. Pending Permit Applications – For Process Unit-Specific Permits Only [LAC 33:III.517.D.18]

List all other process units at this facility for which Part 70 permit applications have been submitted, but have not been acted upon by LDEQ as of the date of submittal of this application. If none, state "none" in the table. *****It is not necessary to update this table during the permit review process, unless requested by LDEQ.*****

Process Unit Name	Permit Number	Date Submitted
NA		

8. LAC 33:I.1701 Requirements – Answer all below for new sources and permit renewals - ☐ Yes ☒ No

Does the company or owner have federal or state environmental permits identical to, or of a similar nature to, the permit for which you are applying in Louisiana or other states? (This requirement applies to all individuals, partnerships, corporations, or other entities who own a controlling interest of 50% or more in your company, or who participate in the environmental management of the facility for an entity applying for the permit or an ownership interest in the permit.)
☐ **Yes** ☐ **No**

If yes, list States: _____

Do you owe any outstanding fees or final penalties to the Department? ☐ **Yes** ☐ **No**
If yes, explain below. Add rows if necessary.

Is your company a corporation or limited liability company? ☐ **Yes** ☐ **No**
If yes, attach a copy of your company's Certificate of Registration and/or Certificate of Good Standing from the Secretary of State. The appropriate certificate(s) should be attached to the end of this application as an appendix.

9. Permit Shield Request [LAC 33:III.517.E.7] - ☐ Yes ☒ No

If yes, check the appropriate boxes to indicate the type of permit shield being sought. Include the specific regulatory citation(s) for which the shield is being requested. Give an explanation of the circumstances that will justify the permit shield request. Attach additional pages if necessary. If additional pages are used, attach them directly behind this page and enter "See Attached Pages" into the Explanation field.

Type of Permit Shield request (check all that apply):

Non-applicability determination for:	Specific Citation(s)	Explanation
☐ 40 CFR 60		
☐ 40 CFR 61		
☐ 40 CFR 63		
☐ Prevention of Significant Deterioration		
☐ Nonattainment New Source Review		

Interpretation of monitoring, recordkeeping, and/or reporting requirements, and/or means of compliance for:	Specific Citation(s)	Explanation
☐ 40 CFR 60		
☐ 40 CFR 61		
☐ 40 CFR 63		
☐ Prevention of Significant Deterioration		
☐ Nonattainment New Source Review		
☐ State Implementation Plan (SIP) Regulation(s) referenced in 40 CFR 52 Subpart T		

10. Certification of Compliance With Applicable Requirements

Statement for Applicable Requirements for Which the Company and Facility Referenced In This Application Is In Compliance

Based on information and belief, formed after reasonable inquiry, the company and facility referenced in this application is in compliance with and will continue to comply with all applicable requirements pertaining to the sources covered by the permit application, as outlined in Tables 1 and 2 in the permit application. For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

For corporations only: By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, **(1)** I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or **(2)** I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.*

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions of Air Pollutants from Part 70 Sources, including all attachments thereto and the compliance statement above, are true, accurate, and complete.

a. Responsible Official		
Name Chris A. Labat		
Title Vice President of Engineering and Technology		
Company LOOP LLC		
Suite, mail drop, or division		
Street or P.O. Box 137 Northpark Boulevard		
City Covington	State LA	Zip 70433
Business phone 985-276-6235		
Email Address calabat@looplic.com		

Signature of responsible official (See 40 CFR 70.2):
Date: 6/9/16

*Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form_7218) available on LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/2758/Default.aspx

CERTIFICATION: I certify that the engineering calculations, drawings, and design are true and accurate to the best of my knowledge.

b. Professional Engineer		
Name Vinh Nguyen		
Title Project Engineer		
Company CK Associates		
Suite, mail drop, or division		
Street or P.O. Box 17170 Perkins Road		
City Baton Rouge	State LA	Zip 70810
Business phone 225-755-1000		
Email Address vinh.nguyen@c-ka.com		

Signature of Professional Engineer:
Date:
Louisiana Registration No.

11. Personnel [LAC 33:III.517.D.1]

a. Manager of Facility who is located at plant site		
Name Darren Faucheux	☐ Primary contact	
Title Operations and Maintenance Superintendent		
Company LOOP LLC		
Suite, mail drop, or division		
Street or P.O. Box 224 East 101 Place		
City Cut Off	**State** LA	**Zip** 70345
Business phone 985-632-1306		
Email address dpfaucheux@looplIc.com		

b. On-site contact regarding air pollution control		
Name Darren Faucheux	☐ Primary contact	
Title Operations and Maintenance Superintendent		
Company LOOP LLC		
Suite, mail drop, or division		
Street or P.O. Box 224 East 101 Place		
City Cut Off	**State** LA	**Zip** 70345
Business phone 985-632-1306		
Email address dpfaucheux@looplIc.com		

c. Person to contact with written correspondence		
Name Cynthia A. Gardner-LeBlanc	☒ Primary contact	
Title Manager of Regulatory Affairs		
Company LOOP LLC		
Suite, mail drop, or division		
Street or P.O. Box 137 Northpark Boulevard		
City Covington	**State** LA	**Zip** 70433
Business phone 985-276-6299		
Email address cgleblanc@looplIc.com		

d. Person who prepared this report		
Name Jennifer Brouillette	☐ Primary contact	
Title Environmental Scientist		
Company CK Associates		
Suite, mail drop, or division		
Street or P.O. Box 17170 Perkins Road		
City Baton Rouge	**State** LA	**Zip** 70810
Business phone 225-755-1000		
Email address jennifer.brouillette@c-ka.com		

e. Person to contact about Annual Maintenance Fees	☐ a ☐ b ☒ c ☐ d ☐ other (specify below)		
Name	☐ Primary contact	**Suite, mail drop, or division**	
Title		**Street or P.O. Box**	
Company		**City**	**State** / **Zip**
Business Phone		**Email Address**	

12. Proposed Project Emissions [LAC 33:III.517.D.3]

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
PM_{10}	0.50
$PM_{2.5}$	0.50
SO_2	0.43
NO_x	10.94
CO	2.41
VOC	417.99
2,2,4-Trimethylpentane	0.22
Benzene	2.48
Cumene	0.04
Ethylbenzene	0.26
n-Hexane	2.60
Toluene	1.36
Xylene	0.78

13. History of Permitted Emissions [LAC 33:III.517.D.18]

List each of the following in chronological order:

- The Permit Number and Date Action Issued for each air quality permit that has been issued to this facility or process unit (for process unit-specific permits) within the last ten (10) years.
- All small source exemptions, authorizations to construct, administrative amendments, case-by-case insignificant activities, and changes of tank service that have been approved since the currently effective Title V Operating Permit or State Operating Permit was issued to this facility or process unit (for process unit-specific permits). It is not necessary to list any such activities issued prior to the issuance of the currently effective Title V Operating Permit or State Operating Permit, if one exists.

Permit Number	Date Action Issued
1560-00027-03	6/12/2007
1560-00027-V0	5/2/2011
1560-00027-V1	7/30/2015

14.a. Enforcement Actions [LAC 33:III.517.D.18] - ☐ Yes ☒ No

If yes, list all federal and state air quality enforcement actions, settlement agreements, and consent decrees received for this facility and/or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit. For each action, list the type of action (or its tracking number), the regulatory authority or authorities that issued the action, and the date that the action was issued. Summarize the conditions imposed by the enforcement action, settlement agreement, and consent decree in Section 22, Table 2. It is not necessary to submit a copy of the referenced action. Add rows to table as necessary.

Type of Action or Tracking Number	Issuing Authority	Date Action Issued	Summary of Conditions Included?
			☐ Yes ☐ No
			☐ Yes ☐ No

14.b. Schedule for Compliance [LAC 33:III.517.E.4] ☐ Yes ☒ No

If the facility or process unit for which application is being made is not in full compliance with all applicable regulations, give a description of how compliance will be achieved, including a schedule for compliance below. Add rows as necessary. See instructions.

15. Letters of Approval for Alternate Methods of Compliance - ☐ Yes ☒ No

If yes, list all correspondence with LDEQ, EPA, or other regulatory bodies that provides for or supports a request for alternate methods of compliance with any applicable regulations for this facility or process unit (for process unit-specific permits). List the date of issuance of the letter and the regulation referenced by the letter. **Attach as an appendix a copy of all documents referenced in this table.** Letters that are not included may not be incorporated into a final permit. Add rows to table as necessary.

Date Letter Issued	Issuing Authority	Referenced Regulation(s)	Copy of Letter Attached?
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No
			☐ Yes ☐ No

16. Initial Notifications and Performance Tests [LAC 33:III.517.D.18] - ☐ Yes ☒ No

If yes, list any initial notifications that have been submitted or one-time performance tests that have been performed for this facility or process unit (for process unit-specific permits) since the issuance of the currently effective Title V Operating Permit or State Operating Permit in order to satisfy regulatory requirements. Any initial notification or one-time performance test requirements that have not been satisfied should be listed in Section 22, Table 2 of this application. Any notifications or performance tests that recur periodically should also be properly noted in Section 22, Table 2 of this application. Add rows to table as necessary.

Initial Notification or One-time Performance Test?	Regulatory Citation Satisfied	Applicable Source(s)	Date Completed/Approved

17. Existing Prevention of Significant Deterioration or Nonattainment New Source Review Limitations [LAC 33:III.517.D.18]

Do one or more emissions sources represented in this permit application currently operate under one or more NSR permits?
☒ Yes ☐ No

If "yes," summarize the limitations from such permit(s) in the following table. Add rows to table as necessary. Be sure to note any annual emissions limitations from such permit(s) in Sections 12 and 13 of this application.

Permit Number	Date Issued	Emission Point ID No.	Pollutant	BACT/LAER Limit[1]	Averaging Period	Description of Control Technology/Work Practice Standards
PSD-LA-796	7/30/2015	TANK CAP	VOC	The VOC emissions estimate for the Crude Oil Storage Tank Cap (GRP0003), found in this PSD permit, is proposed to be modified. BACT is proposed the same for the tanks proposed in this application (EPNs 28-16, 29-16, 30-16, 31-16, 32-16) as the tanks listed in the PSD permit (EPNs 22-14, 23-14, 24-14, 25-14, 26-14, and 27-14). Normal operations: equip with an External Floating Roof. Landings: limit the duration of time that the roof is down. Cleanings: limit the duration of time between cessation of pumping out of product and commencing cleaning activities.		

[1]For example, lb/MM Btu, ppmvd @ 15% O_2, lb/ton, lb/hr

18. Air Quality Dispersion Modeling [LAC 33:III.517.D.15]

Was Air Quality Dispersion Modeling as required by LAC 33:III performed in support of this permit application? (Air Quality Dispersion Modeling is only required when applying for PSD permits and as requested by LDEQ.)
☐ Yes ☒ No

*Has Air Quality Dispersion Modeling completed in accordance with LAC 33:III ever been performed for this facility in support of a air permit application previously submitted for this facility or process unit (for process unit-specific permits) or as required by other regulations **AND** approved by LDEQ?*
☐ Yes ☒ No

If yes, enter the date the most recent Air Quality Dispersion Modeling results as required by LAC 33:III were submitted:

If the answer to either question above is "yes," enter a summary of the most recent results in the following table. If the answer to both questions is "no," enter "none" in the table. Add rows to table as necessary.

Pollutant	Time Period	Calculated Maximum Ground Level Concentration	Louisiana Toxic Air Pollutant Ambient Air Standard or (National Ambient Air Quality Standard {NAAQS})

19. General Condition XVII Activities- ☒ Yes ☐ No

Enter all activities that qualify as Louisiana Air Emissions Permit General Condition XVII Activities.

- Expand this table as necessary to include all such activities.
- See instructions to determine what qualifies as a General Condition XVII Activity.
- Do not include emissions from General Condition XVII Activities in the proposed emissions totals for the permit application.

		Emission Rates – TPY					
Work Activity	**Schedule**	**PM_{10}/ $PM_{2.5}$**	**SO_2**	**NO_x**	**CO**	**VOC**	**Other**
Portable Thermal Oxidizer During Tank Cleaning	2 times/yr	0.06	0.005	0.79	0.67		

20. Insignificant Activities [LAC 33:III.501.B.5] - ☒ Yes ☐ No

Enter all activities that qualify as Insignificant Activities.

- Expand this table as necessary to include all such activities.
- For sources claimed to be insignificant based on size or emission rate (LAC 33:III.501.B.5.A), information must be supplied to verify each claim. This may include but is not limited to operating hours, volumes, and heat input ratings.
- If aggregate emissions from all similar pieces of equipment (i.e. all LAC 33:III.501.B.5.A.1 activities) claimed to be insignificant are greater than 5 tons per year for any pollutant, then the activities can not be claimed as insignificant and must be represented as permitted emission sources. Consult instructions.

Emission Point ID No.	**Description**	**Physical/Operating Data**	**Citation**
There are no proposed changes to the Insignificant Activities except to add one activity shown below.			
38-16	Day Tank for Standby Generator (Clovelly Dome)	94 gallons	LAC 33:III.501.B.5.A.2

21. Regulatory Applicability for Commonly Applicable Regulations – Answer all below [LAC 33:III.517.D.10]

Does this facility contain asbestos or asbestos containing materials? ☐ **Yes** ☒ **No**
If "yes," the facility or any portion thereof may be subject to 40 CFR 61, Subpart M, LAC 33:III.Chapter 27, and/or LAC 33:III.5151 and this application must address compliance as stated in Section 22 of this application

Is the facility or process unit represented in this permit subject to 40 CFR 68, or is any other process unit located at the same facility as the process unit represented in this application subject to 40 CFR 68? ☐ **Yes** ☒ **No**
If "yes," the entire facility is subject to 40 CFR 68 and LAC 33:III.Chapter 59 and this application must address compliance as stated in Section 22 of this application.

Is the facility listed in LAC 33:III.5611

Table 5 ☒ **Yes** ☐ **No**

Table 6 ☒ **Yes** ☐ **No**

Table 7 ☒ **Yes** ☐ **No**

Does the applicant own or operate commercial refrigeration equipment normally containing more than 50 pounds of refrigerant at this facility or process unit? ☐ **Yes** ☒ **No**
If "yes," the entire facility is subject to 40 CFR 82, Subpart F and this application must address compliance as stated in Section 22 of this application.

22. Applicable Regulations, Air Pollution Control Measures, Monitoring, and Recordkeeping

Important points for Table 1 [LAC 33:III.517.D.10]:

- List in Table 1, by Emission Point ID Number and Descriptive Name of the Equipment, state and federal pollution abatement programs and note the applicability or non-applicability of the regulations to each source.
- Adjust the headings for the columns in Table 1 as necessary to reflect all applicable regulations, in addition to any regulations that do not apply but need an applicability determination to verify this fact.
- For each piece of equipment, enter "1" for each regulation that applies. Enter "2" for each regulation that applies to this type of source, but from which this source of emissions is exempt. Enter "3" for equipment that is subject to a regulation, but does not have any applicable requirements. Also, enter "3" for each regulation that have applicable requirements that apply to the particular emission source but the regulations currently do not apply due to meeting a specific criterion, such as it has not been constructed, modified or reconstructed since the regulations have been in place.
- Leave the spaces blank when the regulations clearly would not apply under any circumstances to the source. For example, LAC 33:III.2103 – Storage of Volatile Organic Compounds would never apply to a steam generating boiler, no matter the circumstances.
- Consult instructions.

Important points for Table 2 [LAC 33:III.517.D.4; LAC 33:III.517.D.7; LAC 33:III.517.D.10]:

- For each piece of equipment listed in Table 2, include all applicable limitation, recordkeeping, reporting, monitoring, and testing requirements. Also include any one-time notification or one-time tests performance test requirements that have not been fulfilled.
- Each of these regulatory aspects (limitation, recordkeeping, reporting, etc.) should be addressed for each regulation that is applicable to each emissions source or emissions point.
- For each regulation that provides a choice regarding the method of compliance, indicate the method of compliance that will be employed. It is not sufficient to state that all compliance options will be employed, though multiple compliance options may be approved as alternative operating scenarios.
- Consult instructions.

Important points for Table 3 [LAC 33:III.517.D.16]:

- Each time a 2 or a 3 is used to describe applicability of a source in Table 1, an entry should be made in Table 3 that explains the exemption or non-applicability status of the regulation to that source.
- Fill in all requested information in the table.
- The exact regulatory citation that provides for the specific exemption or non-applicability determination should be entered into the Citation Providing for Exemption or Non-applicability column.
- Consult Instructions.

Important points for Table 4 [LAC 33:III.517.D.18]

- List any single emission source that routes its emissions to another point where these emissions are commingled with the emissions of other sources before being released to the atmosphere. Do not list any single emission source in this table that does not route its emissions in this manner.
- List any and all emission sources that are routed as described above. This includes emission sources that do not otherwise appear in this permit application.
- Consult instructions.

TABLE 1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Source ID No.:	Descriptive Name of the Source	LAC 33:III.Chapter									LAC 33:III.				
		5	9	11	13	15	29	51	56	59	2103	2111	2113	2115	2121
EQTTBD	28-16 Tank 6422 (Clovelly Dome)										1				
EQTTBD	29-16 Tank 6423 (Clovelly Dome)										1				
EQTTBD	30-16 Tank 6424 (Clovelly Dome)										1				
EQTTBD	31-16 Tank 6425 (Clovelly Dome)										1				
EQTTBD	32-16 Tank 6426 (Clovelly Dome)										1				
EQTTBD	1-16 Standby Generator (Clovelly Dome)			1	1										

TABLE 1: APPLICABLE LOUISIANA AND FEDERAL AIR QUALITY REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Source		40 CFR 60					40 CFR 61		40 CFR 63				40 CFR		
ID No.:	Descriptive Name of the Source	A	Ka	Kb	GG	IIII	A	FF	A	VV	ZZZZ	CCCCCC	64	68	82
EQTTBD	28-16 Tank 6422 (Clovelly Dome)	1		1											
EQTTBD	29-16 Tank 6423 (Clovelly Dome)	1		1											
EQTTBD	30-16 Tank 6424 (Clovelly Dome)	1		1											
EQTTBD	31-16 Tank 6425 (Clovelly Dome)	1		1											
EQTTBD	32-16 Tank 6426 (Clovelly Dome)	1		1											
EQTTBD	1-16 Standby Generator (Clovelly Dome)	1				1			1		1				

KEY:

1 The regulations have applicable requirements, which apply to this particular emission source. The emissions source may have an exemption from the control stated in the regulation. The emission source may not have to be controlled but may have monitoring, recordkeeping, or reporting requirements.

2 The regulations have applicable requirements, which may apply to this particular emissions source, but the source is currently exempt from these requirements due to meeting a specific criteria, such as it has been constructed, modified, or reconstructed since the regulations have been in place. If the specific criteria changes the source will have to comply at a future date.

3 The regulations apply to this general type of emission source (i.e. vents, furnaces, towers, and fugitives) but do not apply to this particular emission source.

TABLE 2: STATE AND FEDERAL REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/ Frequency	State Only Requirement
Crude Oil Storage Tanks (Clovelly Dome)	Chapter 21 - Control of	**Requirements that limit emissions or operations -**			
EQTTBD, 28-16, Tank 6422	Emission of Organic	Equip with a submerged fill pipe.	LAC 33:III.2103.B		
EQTTBD, 29-16, Tank 6423	Compounds	Seal closure devices required in LAC 33:III.2103D shall have no visible holes, tears, or other openings in the seals or seal fabric.	LAC 33:III.2103.D.2.a		
EQTTBD, 30-16, Tank 6424					
EQTTBD, 31-16, Tank 6425		Seal closure devices required in LAC 33:III.2103D shall be intact and uniformly in place around the circumference of the floating roof and the tank wall.	LAC 33:III.2103.D.2.b		
EQTTBD, 32-16, Tank 6426		Seal gap area <= 1 in^2/ft of tank diameter (6.5 cm2/0.3m), for gaps between the secondary seal and tank wall that exceed 1/8 inch (0.32 cm) in width.	LAC 33:III.2103.D.2.c	All year	
		Seal gap area <= 10 in^2/ft of tank diameter (65 cm2/0.3m), for gaps between the primary seal and tank wall that exceed 1/8 inch (0.32 cm) in width.	LAC 33:III.2103.D.2.d	All year	
		Initiate repairs of seals within seven working days of recognition of defective conditions by ordering appropriate parts, to avoid noncompliance with LAC 33:III.2103. Complete repairs within three months of the ordering of the repair parts.	LAC 33:III.2103.D.2.e		
		Provide all openings in the external floating roof (except for automatic bleeder vents, rim space vent, and leg sleeves) with a projection below the liquid surface. Equip each opening in the roof (except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves) with a cover, seal or lid that is to be maintained in a closed position at all times except when the device is in actual use. Keep automatic bleeder vents closed at all times except when the roof is being floated off the roof leg supports. Set rim vents to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Equip any emergency roof drain with a slotted membrane fabric cover or equivalent cover that covers at least 90% of the opening.	LAC 33:III.2103.D.3		
		Equip with an external floating roof consisting of a pontoon type roof, double deck type roof, or external floating cover which will rest or float on the surface of the liquid contents and is equipped with a primary closure seal to close the space between the roof edge and tank wall and a continuous secondary seal (a rim mounted secondary) extending from the floating roof to the tank wall.	LAC 33:III.2103.D		
		Determine compliance with LAC 33:III.2103.D.2 and 4 using the methods in LAC 33:III.2103.H.1.	LAC 33:III.2103.H.1		
		Determine VOC maximum true vapor pressure using the methods in LAC 33:III.2103.H.3.a-e.	LAC 33:III.2103.H.3		
		Requirements that specify monitoring -			
		Secondary Seal or closure mechanism monitored by visual inspection/determination semiannually.	LAC 33:III.2103.D.2.e	All year	
		Secondary seals: Seal gap area & width monitored by measurement annually at any tank level, provided the roof is off its legs.	LAC 33:III.2103.D.2.e	All year	
		Primary seals: Seal gap area & width monitored by measurement once every five years at any tank level, provided the roof is off its legs.	LAC 33:III.2103.D.2.e	All year	
		Requirements that specify records to be kept and record retention time -			
		Equipment/operational data recordkeeping by electronic or hard copy upon occurrence of event. Keep records of conditions that are not up to the standards described in LAC 33:III.2103.D.2 and the date(s) that the standards are not met. Notify the administrative authority within seven days of noncompliance with LAC 33:III.2103.D.2	LAC 33:III.2103.D.2.e		
		Equipment/operational data recordkeeping by electronic or hard copy at the regulation's specified frequency. Keep records of the information specified in LAC 33:III.2103.I.1-7, as applicable.	LAC 33:III.2103.I		
		Requirements that specify reports to be submitted -			
		None			
		Requirements that specify performance testing -			
		None			

TABLE 2: STATE AND FEDERAL REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/ Frequency	State Only Requirement
Crude Oil Storage Tanks (Clovelly Dome)	40 CFR Part 60	**Requirements that limit emissions or operations -**			
EQTTBD, 28-16, Tank 6422 EQTTBD, 29-16, Tank 6423 EQTTBD, 30-16, Tank 6424 EQTTBD, 31-16, Tank 6425 EQTTBD, 32-16, Tank 6426	NSPS Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	Except for automatic bleeder vents and rim space vents, each opening in a non contact external floating roof shall provide a projection below the liquid surface. Except for automatic bleeder vents, rim space vents, roof drains, and leg sleeves, equip each opening in the roof with a gasketed cover, seal, or lid and maintain in a closed position at all times (i.e., no visible gap) except when the device is in actual use. Close automatic bleeder vents at all times when the roof is floating except when the roof is being floated off or is being landed on the roof leg supports. Set rim vents to open when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting. Equip automatic bleeder vents and rim space vents with gaskets. Provide each emergency roof drain with a slotted membrane fabric cover that covers at least 90% of the area of the opening.	40 CFR 60.112b(a)(2)(ii)		
		Equip with an external floating roof consisting of a pontoon-type or double-deck type cover that rests on the liquid surface in a vessel with no fixed roof. Equip with a closure device between the wall of the storage vessel and the roof edge. The closure device consists of two seals, secondary above the primary. The primary seal shall be either a mechanical shoe seal or a liquid-mounted seal. Except as provided in 40 CFR 60.113b(b)(4), the primary seal shall completely cover the annular space between the edge of the floating roof and tank wall. The secondary seal shall completely cover the annular space between the external floating roof and the wall of the storage vessel in a continuous fashion except as allowed in 40 CFR 60.113b(b)(4). The roof shall be floating on the liquid at all times (i.e., off the roof leg supports) except as during initial fill until the roof is lifted off leg supports and when the tank is completely emptied and subsequently refilled. The process of filling, emptying, or refilling when the roof is resting on the leg supports shall be continuous and shall be accomplished as rapidly as possible.	40 CFR 60.112b(a)(2)		
		Add the gap surface area of each gap location for the primary seal and the secondary seal individually and divide the sum for each seal by the nominal diameter of the tank and compare each ratio to the respective standards in 40 CFR 60.113b(b)(4).	40 CFR 60.113b(b)(3)		
		Seal gap area <= 212 cm^2/m of tank diameter (accumulated area) for gaps between the tank wall and the mechanical shoe seal or liquid-mounted primary seal.	40 CFR 60.113b(b)(4)(i)	All year	
		Seal gap width <= 3.81 cm for the width of any portion of any gap between the tank wall and the mechanical shoe seal or liquid-mounted primary seal.	40 CFR 60.113b(b)(4)(i)	All year	
		One end of the mechanical shoe is to extend into the stored liquid, and the other end is to extend a minimum vertical distance of 61 centimeters above the stored liquid surface.	40 CFR 60.113b(b)(4)(i)(A)		
		There are to be no holes, tears, or other openings in the shoe, primary seal fabric, or seal envelope.	40 CFR 60.113b(b)(4)(i)(B)		
		Install the secondary seal above the primary seal so that it completely covers the space between the roof edge and the tank wall except as provided in 40 CFR 60.113b(b)(2)(iii).	40 CFR 60.113b(b)(4)(ii)(A)		
		Seal gap area <= 21.2 cm^2/m of tank diameter (accumulated area) for gaps between the tank wall and the secondary seal.	40 CFR 60.113b(b)(4)(ii)(B)	All year	
		Seal gap width <= 1.27 cm for the width of any portion of any gap between the tank wall and the secondary seal.	40 CFR 60.113b(b)(4)(ii)(B)	All year	
		There are to be no holes, tears, or other openings in the secondary seal fabric, or seal fabric.	40 CFR 60.113b(b)(4)(ii)(C)		
		Make necessary repairs or empty the storage vessel within 45 days of identification in any inspection for seals not meeting the requirements listed in 40 CFR 60.113b(b)(4)(i) and (ii) except as specified in 40 CFR 60.113b(b)(4)(iii).	40 CFR 60.113b(b)(4)		
		If the external floating roof has defects, the primary seal has holes, tears, or other openings in the seal or the seal fabric, or the secondary seal has holes, tears, or other openings in the seal or the seal fabric, repair the items as necessary so that none of the conditions specified in this paragraph exist before filling or refilling the storage vessel with VOL.	40 CFR 60.113b(b)(6)(i)		

TABLE 2: STATE AND FEDERAL REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/ Frequency	State Only Requirement
Crude Oil Storage Tanks (Clovelly Dome)	40 CFR Part 60	**Requirements that specify monitoring -**			
EQTTBD, 28-16, Tank 6422 EQTTBD, 29-16, Tank 6423 EQTTBD, 30-16, Tank 6424 EQTTBD, 31-16, Tank 6425 EQTTBD, 32-16, Tank 6426	NSPS Subpart Kb - Standards of Performance for Volatile Organic Liquid Storage Vessels for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984	Tank roof and seals monitored by visual inspection/determination at the regulation's specified frequency. Inspect the external floating roof, the primary seal, the secondary seal, and fittings each time the storage vessel is emptied and degassed.	40 CFR 60.113b(b)(6)	All year	
		Requirements that specify records to be kept and record retention time -			
		Gap measurement(s) recordkeeping by electronic or hard copy upon each occurrence of gap measurement performance, as required by 40 CFR 60.113b(b). Each record shall identify the storage vessel in which the measurement was performed and shall contain the date of the measurement, the raw data obtained in the measurement, the calculation described in 40 CFR 60.113b(b)(2)and (b)(3). Keep copies of all records at least two years.	40 CFR 60.115b(b)(3)		
		Equipment/operational data recordkeeping by electronic or hard copy continuously. Keep readily accessible records showing the dimension of the storage vessel and an analysis showing the capacity of the storage vessel. Keep copies of all records for the life of the source as specified by 40 CFR 60.116b(a).	40 CFR 60.116b(b)		
		VOL storage data recordkeeping by electronic or hard copy continuously. Records consist of the VOL stored, the period of storage, and the maximum true vapor pressure of that VOL during the respective storage period. Keep copies of all records for at least two years.	40 CFR 60.116b(c)		
		Requirements that specify reports to be submitted -			
		Submit notification: Due at least 30 days in advance of any gap measurements required by 40 CFR 60.113b(b)(1)to afford DEQ the opportunity to have an observer present.	40 CFR 60.113b(b)(5)		
		Submit notification in writing: Due at least 30 days prior to the filling or refilling of each storage vessel for which an inspection is required by 40 CFR 60.113b(6) to afford DEQ an opportunity to inspect the storage vessel prior to refilling. If the inspection required by paragraph 40 CFR 60.113b(b)(6) is not planned and the owner or operator could not have known about the inspection 30 days in advance or refilling the tank, notify DEQ at least 7 days prior to the refilling of the storage vessel. Notify by telephone immediately followed by written documentation demonstrating why the inspection was unplanned. Alternatively, submit notification in writing including the written documentation and send by express mail so that it is received by DEQ at least 7 days prior to the refilling.	40 CFR 60.113b(b)(6)(ii)		
		Submit a report to DEQ as an attachment to the notification required by 40 CFR 60.7(a)(3). This report shall describe the control equipment and certify that the control equipment meets the specifications of 40 CFR 60.112b(a)(2) and 60.113b(b)(2), (b)(3), and (b)(4). Keep copies of all reports for at least two years.	40 CFR 60.115b(b)(1)		
		Submit a report to DEQ within 60 days of performing the seal gap measurements required by 40 CFR 60.113b(b)(1). The report shall contain the date of measurement, the raw data obtained in the measurement, the calculations described in 40 CFR 60.113b(b)(2) and (b)(3). Keep copies of all reports for at least two years.	40 CFR 60.115b(b)(2)		
		Submit a report to DEQ within 30 days after each seal gap measurement detects gaps exceeding the limitations specified in 40 CFR 60.113b(b)(4). The report will identify the vessel and contain the information specified in 40 CFR 60.115b(b)(2) and the date the vessel was emptied or the repairs made and date of repair. Keep copies of all reports for at least two years.	40 CFR 60.115b(b)(4)		
		Submit notification: Due within 30 days when the maximum true vapor pressure of the liquid exceeds the respective maximum true vapor pressure values for each volume range.	40 CFR 60.116b(d)		
		Requirements that specify performance testing -			
		None			

TABLE 2: STATE AND FEDERAL REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/ Frequency	State Only Requirement
1-16 Standby Generator (Clovelly Dome)	Chapter 11 - Control of Emissions of Smoke	**Requirements that limit emissions or operations -**			
		Emission of smoke generated by the burning of fuel or combustion of waste material in a combustion unit, including the incineration of industrial, commercial, institutional and municipal wastes, shall be controlled so that the shade or appearance of the emission is not darker than 20% average opacity, except that such emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1101.B		
		Requirements that specify monitoring -			
		None			
		Requirements that specify records to be kept and record retention time -			
		None			
		Requirements that specify reports to be submitted -			
		None			
		Requirements that specify performance testing -			
		None			
	Chapter 13 - Emission Standards for PM	**Requirements that limit emissions or operations -**			
		Opacity <= 20%; except emissions may have an average opacity in excess of 20% for not more than one six-minute period in any 60 consecutive minutes.	LAC 33:III.1311.C		
		Requirements that specify monitoring -			
		None			
		Requirements that specify records to be kept and record retention time -			
		None			
		Requirements that specify reports to be submitted -			
		None			
		Requirements that specify performance testing -			
		None			
	NSPS Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	**Requirements that limit emissions or operations -**			
		Owners and operators of 2007 model year and later emergency stationary CI ICE with a displacement of less than 30 liters per cylinder that are not fire pump engines must comply with the emission standards for new nonroad CI engines in 60.4202 for all pollutants, for the same model year and maximum engine power for their 2007 model year and later stationary CI ICE.	40 CFR 60.4205(b)		
		Operate and maintain CI ICE in accordance with approved manufacturer specifications that comply with the applicable emission standards over the lifetime of the engine.	40 CFR 60.4206		
		Beginning October 1, 2010, owners and operators of stationary CI ICE subject to this subpart with a displacement of less than 30 liters per cylinder that use diesel fuel must use diesel fuel that meets the requirement of 40 CFR 80.510(b) for nonroad diesel fuel.	40 CFR 60.4207(b)		
		After December 31, 2008, owners and operators may not install stationary CI ICE (excluding fire pump engines) that do not meet the applicable requirements for 2007 model year engines.	40 CFR 60.4208(a)		
		Engine must be equipped with a non-resettable hour meter prior to startup of the engine.	40 CFR 60.4209(a)		
		Operate and maintain the stationary CI internal combustion engine and control device according to the manufacturer's written instructions or procedures developed by the owner or operator that are approved by the engine manufacturer. You may only change those settings that are permitted by the manufacturer. You must meet the requirements of 40 CFR parts 89, 94, and/or 1068, as they apply to you.	40 CFR 60.4211(a)		

TABLE 2: STATE AND FEDERAL REQUIREMENTS
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Applicable Requirement	Compliance Method/Provision	Compliance Citation	Averaging Period/ Frequency	State Only Requirement
1-16 Standby Generator (Clovelly Dome)	NSPS Subpart IIII - Standards of Performance for Stationary Compression Ignition Internal Combustion Engines	**Requirements that limit emissions or operations -**			
		If you are an owner or operator of a 2007 model year and later CI internal combustion engine and must comply with the emission standards specified in 60.4205(b), you must comply by purchasing an engine certified to the emission standards in 60.4205(b), as applicable, for the same model year and maximum engine power. The engine must be installed and configured according to the manufacturer's specifications.	40 CFR 60.4211(c)		
		Requirements that specify monitoring -			
		None			
		Requirements that specify records to be kept and record retention time -			
		Operating time recordkeeping by electronic or hard copy upon occurrence of event. If the emergency engine does not meet the standards applicable to non-emergency engines in the applicable model year, keep records of the operation of the engine in emergency and non-emergency service that are recorded through the non-resettable hour meter. Record the time of operation of the engine and the reason the engine was in operation during that time.	40 CFR 60.4214(b)		
		Requirements that specify reports to be submitted -			
		None			
		Requirements that specify performance testing -			
		None			
	40 CFR Part 63 Subpart ZZZZ – National Emissions Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines	**Requirements that limit emissions or operations -**			
		Comply with 40 CFR 63 Subpart ZZZZ by complying with 40 CFR 60 IIII.	40 CFR 63.6590(c)		
		Requirements that specify monitoring -			
		None			
		Requirements that specify records to be kept and record retention time -			
		None			
		Requirements that specify reports to be submitted -			
		None			
		Requirements that specify performance testing -			
		None			

TABLE 3: EXPLANATION FOR EXEMPTION STATUS OR NON-APPLICABILITY OF A SOURCE
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Emission Point ID No.:	Requirement	Exempt or Does Not Apply	Explanation	Citation Providing for Exemption or Non-applicability
NA				

TABLE 4: EQUIPMENT LIST
LOOP, LLC - Port Complex
Lafourche Parish, Louisiana

Enter each single emission point that routes its emissions to another source (i.e., a control device) or a common stack, or is part of an Emissions Cap. List the emissions source to which each single emission point is routed or the Cap of which the source is a member, if applicable. Consult instructions.

Emission Point ID No:	Description	Construction Date	Routes to:	Operating Rate/Volume	Applicable Requirement(s)?
TBD	28-16 Tank 6422 (Clovelly Dome)		Tank CAP (GRP0003)	371,000 bbl	x Yes No
TBD	29-16 Tank 6423 (Clovelly Dome)		Tank CAP (GRP0003)	600,000 bbl	x Yes No
TBD	30-16 Tank 6424 (Clovelly Dome)		Tank CAP (GRP0003)	600,000 bbl	x Yes No
TBD	31-16 Tank 6425 (Clovelly Dome)		Tank CAP (GRP0003)	600,000 bbl	x Yes No
TBD	32-16 Tank 6426 (Clovelly Dome)		Tank CAP (GRP0003)	600,000 bbl	x Yes No

23. Emissions Inventory Questionnaire (EIQ) Forms [LAC 33:III.517.D.3; 517.D.6]

Complete one (1) EIQ for:

- Each emission source. If two emission sources have a common stack, the applicant may submit one EIQ sheet for the common emissions point. Note any emissions sources that route to this common point in Table 4 of the application.
- Each emissions CAP that is proposed. In general, this applies to each source that is part of the CAP.
- Each alternate operating scenario that a source may operate under. Some common scenarios are:
    1. Sources that combust multiple fuels
    2. Sources that have Startup/Shutdown max lb/hr emission rates higher than the max lb/hr for normal operating conditions would need an EIQ for the Startup/Shutdown emission rates for those sources
- Fugitive emissions releases. One (1) EIQ should be completed for each of the following types of fugitive emissions sources or emissions points:
    1. Equipment leaks.
    2. Non-equipment leaks (i.e. road dust, settling ponds, etc).

For each EIQ:

- Fill in all requested information.
- Speciate all Toxic Air Pollutants and Hazardous Air Pollutants emitted by the source.
- Use appropriate significant figures.
- Consult instructions.

The EIQ is in Microsoft Word Excel. Visit the following website to get to the EIQ form.
http://www.deq.louisiana.gov/portal/DIVISIONS/AirPermits/AirPermitApplications.aspx

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
TANK CAP	Crude Oil Storage Tank CAP (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 766300 mE Vertical 3263500 mN
GRP0003		Latitude 29 ° 27 ' 45 " hundredths
		Longitude 90 ° 18 ' 20 " hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft / ft^2	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr		25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

GRP0003, TANK CAP consists of point sources EQT0027 - EQT0038, EQT0040, EQT0042, EQT0043 in Title V Permit No. 1560-00027-V0.
The Clovelly Tank Facility Crude Oil Storage Tank Project added EQT0048 - EQT0053 to GRP0003, included in Title V Permit No. 1560-00027-V1.
This current application proposes to add five tanks to the initial project.
Note that this tank cap also includes filling and degassing/cleaning emissions.

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks:	Fixed Roof	Floating Roof	External	Internal
Date Engine Ordered			Engine Model Year	
Date Engine Was Built by Manufacturer				

SI Engines:	Rich Burn	Lean Burn	2 Stroke	4 Stroke

Emission Point ID No. (Designation): TANK CAP	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Total VOC (including those listed below)				93.88	-	411.19	430.75	C		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	0.05	-	0.22	0.22	U		ppm by vol
Benzene			00071-43-2	0.55	-	2.41	2.53	C		ppm by vol
Cumene			00098-82-8	0.01	-	0.03	0.03	U		ppm by vol
Ethyl benzene			00100-41-4	0.05	-	0.22	0.22	U		ppm by vol
n-Hexane			00110-54-3	0.58	-	2.55	2.68	C		ppm by vol
Toluene			00108-88-3	0.30	-	1.30	1.33	C		ppm by vol
Xylene (mixed isomers)			01330-20-7	0.16	-	0.69	0.67	C		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun | 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
28-16	Tank 6422 (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 765059 mE Vertical 3261562 mN
TBD		Latitude 29 ° 27 ' 19 " 77 hundredths
		Longitude 90 ° 16 ' 01 " 64 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft / ft²	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	proposed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

This tank is proposed to be built and as part of GRP0003, Crude Oil Storage Tank Cap (Clovelly Dome).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	27,397 bbl/day	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	371,000 bbl	
Shell Height (ft)	50	
Tank Diameter (ft)	243	

Tanks: Fixed Roof | Floating Roof x | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 28-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Total VOC (including those listed below)				-	-	-	Capped	A		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	-	-	-	Capped	A		ppm by vol
Benzene			00071-43-2	-	-	-	Capped	A		ppm by vol
Cumene			00098-82-8	-	-	-	Capped	A		ppm by vol
Ethyl benzene			00100-41-4	-	-	-	Capped	A		ppm by vol
n-Hexane			00110-54-3	-	-	-	Capped	A		ppm by vol
Toluene			00108-88-3	-	-	-	Capped	A		ppm by vol
Xylene (mixed isomers)			01330-20-7	-	-	-	Capped	A		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
29-16	Tank 6423 (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 764678 mE Vertical 3261707 mN
TBD		Latitude 29 ° 27 ' 24 " 76 hundredths
		Longitude 90 ° 16 ' 15 " 63 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft ft^2	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	proposed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)
a		
b		
c		

Notes

This tank is proposed to be built and as part of GRP0003, Crude Oil Storage Tank Cap (Clovelly Dome).

Operating Parameters (include units)		
	Parameter	Description
Normal Operating Rate/Throughput	27,397 bbl/day	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	600,000 bbl	
Shell Height (ft)	50	
Tank Diameter (ft)	310	

Tanks: Fixed Roof | Floating Roof x | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 29-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Proposed Emission Rates: Maximum (lbs/hr)	Proposed Emission Rates: Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Total VOC (including those listed below)				-	-	-	Capped	A		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	-	-	-	Capped	A		ppm by vol
Benzene			00071-43-2	-	-	-	Capped	A		ppm by vol
Cumene			00098-82-8	-	-	-	Capped	A		ppm by vol
Ethyl benzene			00100-41-4	-	-	-	Capped	A		ppm by vol
n-Hexane			00110-54-3	-	-	-	Capped	A		ppm by vol
Toluene			00108-88-3	-	-	-	Capped	A		ppm by vol
Xylene (mixed isomers)			01330-20-7	-	-	-	Capped	A		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
30-16	Tank 6424 (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 764834 mE Vertical 3261713 mN
TBD		Latitude 29 ° 27 ' 24 " 85 hundredths
		Longitude 90 ° 16 ' 09 " 84 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft / ft²	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	proposed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

This tank is proposed to be built and as part of GRP0003, Crude Oil Storage Tank Cap (Clovelly Dome).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	27,397 bbl/day	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	600,000 bbl	
Shell Height (ft)	50	
Tank Diameter (ft)	310	

Tanks: Fixed Roof | Floating Roof x | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 30-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Total VOC (including those listed below)				-	-	-	Capped	A		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	-	-	-	Capped	A		ppm by vol
Benzene			00071-43-2	-	-	-	Capped	A		ppm by vol
Cumene			00098-82-8	-	-	-	Capped	A		ppm by vol
Ethyl benzene			00100-41-4	-	-	-	Capped	A		ppm by vol
n-Hexane			00110-54-3	-	-	-	Capped	A		ppm by vol
Toluene			00108-88-3	-	-	-	Capped	A		ppm by vol
Xylene (mixed isomers)			01330-20-7	-	-	-	Capped	A		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun | 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
31-16	Tank 6425 (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 764671 mE Vertical 3261864 mN
TBD		Latitude 29 ° 27 ' 29 " 88 hundredths
		Longitude 90 ° 16 ' 15 " 77 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft / ft^2	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	proposed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

This tank is proposed to be built and as part of GRP0003, Crude Oil Storage Tank Cap (Clovelly Dome).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	27,397 bbl/day	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	600,000 bbl	
Shell Height (ft)	50	
Tank Diameter (ft)	310	

Tanks: Fixed Roof | Floating Roof x | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 31-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Proposed Emission Rates: Maximum (lbs/hr)	Proposed Emission Rates: Annual (tons/yr)	Permitted Emission Rate (Current): Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Total VOC (including those listed below)				-	-	-	Capped	A		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	-	-	-	Capped	A		ppm by vol
Benzene			00071-43-2	-	-	-	Capped	A		ppm by vol
Cumene			00098-82-8	-	-	-	Capped	A		ppm by vol
Ethyl benzene			00100-41-4	-	-	-	Capped	A		ppm by vol
n-Hexane			00110-54-3	-	-	-	Capped	A		ppm by vol
Toluene			00108-88-3	-	-	-	Capped	A		ppm by vol
Xylene (mixed isomers)			01330-20-7	-	-	-	Capped	A		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun | 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
32-16	Tank 6426 (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 764827 mE Vertical 3261871 mN
TBD		Latitude 29 ° 27 ' 29 " 97 hundredths
		Longitude 90 ° 16 ' 09 " 98 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft / ft²	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	proposed	25%	25%	25%	25%

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

This tank is proposed to be built and as part of GRP0003, Crude Oil Storage Tank Cap (Clovelly Dome).

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	27,397 bbl/day	
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement	600,000 bbl	
Shell Height (ft)	50	
Tank Diameter (ft)	310	

Tanks: Fixed Roof | Floating Roof x | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 32-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Proposed Emission Rates: Maximum (lbs/hr)	Proposed Emission Rates: Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Total VOC (including those listed below)				-	-	-	Capped	A		ppm by vol
2,2,4-Trimethylpentane			00540-84-1	-	-	-	Capped	A		ppm by vol
Benzene			00071-43-2	-	-	-	Capped	A		ppm by vol
Cumene			00098-82-8	-	-	-	Capped	A		ppm by vol
Ethyl benzene			00100-41-4	-	-	-	Capped	A		ppm by vol
n-Hexane			00110-54-3	-	-	-	Capped	A		ppm by vol
Toluene			00108-88-3	-	-	-	Capped	A		ppm by vol
Xylene (mixed isomers)			01330-20-7	-	-	-	Capped	A		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun | 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
19-78	Portable Diesel Generator (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 766300 mE Vertical 3263500 mN
EQT 0013		Latitude 29 ° 28 ' 21 " 54 hundredths
		Longitude 90 ° 15 ' 13 " 93 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	0.33 ft	10 ft	2,478.67 ft/sec	212 ft^3/min	1,100 °F	100 hr/yr	constructed	25%	25%	25%	25%
	ft^2										

Fuel	Type of Fuel Used and Heat Input (see instructions)	
	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	0.07
b		
c		

Notes

This source complies with the applicable requirements of NESHAP ZZZZ.

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput	10 hp	
Maximum Operating Rate/Throughput	10 hp	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: Fixed Roof | Floating Roof | External | Internal

Date Engine Ordered | Engine Model Year

Date Engine Was Built by Manufacturer

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation): 19-78	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Particulate matter (PM_{10})				-	-	-	<0.01	D		gr/std ft^3
Particulate matter ($PM_{2.5}$)				-	-	-	<0.01	D		gr/std ft^3
Sulfur dioxide				-	-	-	<0.01	D		ppm by vol
Nitrogen oxides				-	-	-	0.02	D		ppm by vol
Carbon monoxide				-	-	-	<0.01	D		ppm by vol
Total VOC (including those listed below)				-	-	-	<0.01	D		ppm by vol

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Jun 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
1-16	Standby Generator (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal 764952 mE Vertical 3261810 mN
EQTTBD		Latitude 29 ° 27 ' 27 " 89 hundredths
		Longitude 90 ° 16 ' 05 " 39 hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
yes	0.67 ft / ft²	18 ft	161 ft/sec	6,759 ft^3/min	865 °F	100 hr/yr	proposed	25%	25%	25%	25%

Fuel — Type of Fuel Used and Heat Input (see instructions)

	Type of Fuel	Heat Input (MMBTU/hr)
a	Diesel	4.70
b		
c		

Notes

This source complies with the applicable requirements of NESHAP ZZZZ by complying with NSPS IIII.

Operating Parameters (include units)

	Parameter	Description
Normal Operating Rate/Throughput	671 hp	
Maximum Operating Rate/Throughput	671 hp	
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks: Fixed Roof | Floating Roof | External | Internal

Date Engine Ordered		Engine Model Year	
Date Engine Was Built by Manufacturer			

SI Engines: Rich Burn | Lean Burn | 2 Stroke | 4 Stroke

Emission Point ID No. (Designation) 1-16 / Pollutant	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates: Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Permitted Emission Rate (Current) Annual (tons/yr)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
Particulate matter (PM_{10})				0.47	0.47	0.02	-	A		gr/std ft^3
Particulate matter ($PM_{2.5}$)				0.47	0.47	0.02	-	A		gr/std ft^3
Sulfur dioxide				0.27	0.27	0.01	-	A		ppm by vol
Nitrogen oxides				16.10	16.10	0.81	-	A		ppm by vol
Carbon monoxide				3.69	3.69	0.18	-	A		ppm by vol
Total VOC (including those listed below)				0.47	0.47	0.02	-	A		ppm by vol

24. NSR Applicability Summary [LAC 33:III.504 and LAC 33:III.509] ☒ N/A

This section consists of five tables, A-E, and is applicable only to new and existing major stationary sources (as defined in LAC 33:III.504 or in LAC 33:III.509) proposing to permit a physical change or change in the method of operation. It would also apply to existing minor stationary sources proposing a physical change or change in the method of operation where the change would be a major source in and of itself. Add rows to each table as necessary. Provide a written explanation of the information summarized in these tables. Consult instructions.

24.A. Project Summary

		A	B	C	D	E	F
Emission Point ID	Description	New, Modified, Affected, or Unaffected*	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	Projected Actual Emissions (TPY)	Post-Project Potential to Emit (TPY)	Change
$PM_{2.5}$	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						$PM_{2.5}$ Change:	
PM_{10}	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						PM_{10} Change:	
SO_2	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						SO_2 Change:	
NO_X	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						NO_X Change:	
CO	**24-Month Period:** MM/DD/YYYY – MM/DD/YYYY						
						CO Change:	

VOC	24-Month Period: MM/DD/YYYY – MM/DD/YYYY						
						VOC Change:	

CO_2e	24-Month Period: MM/DD/YYYY – MM/DD/YYYY						
						CO_2e Change:	

* Unaffected emissions units are not required to be listed individually. By choosing not to list unaffected emissions units, the applicant asserts that all emissions units not listed in Table 24.A will not be modified or experience an increase in actual annual emissions as part of the proposed project.

24.B. Creditable Contemporaneous Changes

Contemporaneous Period: MM/DD/YYYY – MM/DD/YYYY	

		A	B	C	D	E	F
Emission Point ID	Description	Date of Modification	Pre-Project Allowables (TPY)	Baseline Actual Emissions (over 24-month period)	24-Month Period	Post-Project Potential to Emit (TPY)	Change
$PM_{2.5}$							
						$PM_{2.5}$ Change:	
PM_{10}							
						PM_{10} Change:	
SO_2							
						SO_2 Change:	
NO_X							
						NO_X Change:	
CO							

24.B. Creditable Contemporaneous Changes

						CO Change:	

VOC							
						VOC Change:	

CO_2e							
						CO_2e Change:	

For each source identified as "New" or "Modified" in Section 24.A, complete the following table for each pollutant that will trigger NSR. If LAER is not required per LAC 33:III.504.D.3, indicate such.

24.C. BACT/LAER Summary

Emission Point ID	Pollutant	BACT/LAER	Limitation	Averaging Period	Description of Control Technology/Work Practice Standard(s)

24.D. PSD Air Quality Analyses Summary

		A	B	C	D	E	F	G	H	I
Pollutant	Averaging Period	Preliminary Screening Concentration ($\mu g/m^3$)	Level of Significant Impact ($\mu g/m^3$)	Significant Monitoring Concentration ($\mu g/m^3$)	Background ($\mu g/m^3$)	Maximum Modeled Concentration ($\mu g/m^3$)	Modeled + Background Concentration ($\mu g/m^3$)	NAAQS ($\mu g/m^3$)	Modeled PSD Increment Consumption ($\mu g/m^3$)	Allowable Class II PSD Increment ($\mu g/m^3$)
$PM_{2.5}$	24-hour		1.2	4				35		-
	Annual		0.3	-				15		-
PM_{10}	24-hour		5	10				150		30
	Annual		1	-				50		17
SO_2	1-hour		7.8	-				195		-
	3-hour		25	-				1300		512
	24-hour		5	13				365		91
	Annual		1	-				80		20
NO_X	1-hour		7.5	-				188		-
	Annual		1	14				100		25
CO	1-hour		2000	-				40,000	-	-
	8-hour		500	575				10,000	-	-
Lead	3-month		-	0.1				1.5	-	-

24.E Nonattainment New Source Review Offsets [LAC 33:III.517.D.16, LAC 33:III.504.D.4 & 5] ☒ **N/A**

Complete this section only if the proposed project triggers Nonattainment New Source Review (NNSR).

This project triggers NNSR review for: ☐ **NO_X** ☐ **VOC**

NO_X:

Is the applicant proposing to use internal offsets? ☐ **Yes** ☐ **No**

If not, identify the source of the offsets. **Company:** _____

Facility/Unit: _____

Permit No.: _____

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?

☐ **Yes** ☐ **No**

If the ERC application has already been submitted, give the date: _____

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

VOC:

Is the applicant proposing to use internal offsets? ☐ **Yes** ☐ **No**

If not, identify the source of the offsets. **Company:** _____

Facility/Unit: _____

Permit No.: _____

Is an ERC Bank Application included with this application, or has an application already been submitted to LDEQ?

☐ **Yes** ☐ **No**

If the ERC application has already been submitted, give the date: _____

Identify the emissions units from which the offsets will be obtained (reference specific Emission Point ID numbers).

In order to expedite processing, please be sure the ERC Bank Application is completed properly. In the case of NO_X, the document should clearly differentiate between ozone season and non-ozone season actual emissions during the baseline period. Regarding NO_X and VOC, be sure to indicate if a portion of the reductions are no longer surplus (e.g., due to new or revised federal or state regulations, use in a netting analysis, etc.).

24.F. Economic Impact

Answer the following questions.

How many temporary jobs will be added as a result of this project?

How many permanent jobs will be added as a result of this project?

24.G Notification of Federal Land Manager [LAC 33:III.504.E.1, LAC 33:III.509.P.1]
Complete this section only if the proposed project triggers NNSR or PSD.

a. Is the proposed facility or modification located within 100 kilometers of a Class I Area? ☐ **Yes** ☐ **No**
If Yes, determination of Q/d is not required; skip to the next question. If No, complete the Q/d equation below:

$$Q/d = \frac{PM_{10\,(NEI)} + SO_{2\,(NEI)} + NO_{X\,(NEI)} + H_2SO_{4\,(NEI)}}{\text{Class I km}}$$

where:
$PM_{10\,(NEI)}$ = net emissions increase of PM_{10}[1,2]
$SO_{2\,(NEI)}$ = net emissions increase of SO_2[1,2]
$NO_{X\,(NEI)}$ = net emissions increase of NO_X[1,2]
$H_2SO_{4\,(NEI)}$ = net emissions increase of H_2SO_4[1,2]
Class I km = distance to nearest Class I Area[3]

$$Q/d = \frac{\_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_ + \_\_\_\_\_}{\_\_\_\_\_} = \_\_\_\_\_$$

If Q/d < 10, proceed to Section 25. If Q/d ≥ 10, complete the remainder of this Section.

b. Has the applicant provided a copy of the application to the Federal Land Manager? ☐ **Yes** ☐ **No**

c. Does the application contain modeling that demonstrates no adverse impact on Air Quality Related Values (AQRVs) in the Class I Area? ☐ **Yes** ☐ **No**

d. If Yes, indicate the model used: ☐ **VISCREEN** ☐ **PLUVUE II** ☐ **CALPUFF** ☐ **Other:**[4] _____

e. Has the Federal Land Manager concurred that the proposed project will not adversely impact any AQRVs?
☐ **Yes** ☐ **No** If Yes, please attach correspondence.

[1]If the net emissions increase of any pollutant is negative, enter "0."
[2]If the project did not trigger a netting analysis, use the project increase. In this case, the value will be less than the pollutant's significance level.
[3]In kilometers.
[4]Model must be approved by LDEQ and the Federal Land Manager.

25. Environmental Assessment Statement (EAS or "IT" Question Responses)

[La. R.S. 30:2018] ☐ **Yes** ☐ **No**

*** This section is required when applying for new Part 70 operating permits and/or major modifications. Any applications for these permit types that do not include answers to these questions will not be considered to be administratively complete. ***

For new Part 70 operating permits and/or major modifications, answers to these questions must be provided by the applicant to the local governmental authority and the designated public library at no additional costs to these entities. Consult instructions to determine what is considered to be a "local governmental authority" and a "designated public library". Indicate the name and address of the local governmental authority and the designated public library to which the answers to these questions were sent:

Name of Local Governing Authority			**Name of Designated Public Library**		
Street or P.O. Box			**Street or P.O. Box**		
City	**State**	**ZIP**	**City**	**State**	**ZIP**

Answer the following five questions on separate pages using full and complete answers. Include as many pages as necessary in order to provide full and complete answers. This information is required per Louisiana Revised Statutes 30:2018 (La. R.S. 30:2018).

Question 1: **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?** (This question requires the permittee to identify adverse environmental effects, both potential and real.)

Question 2: **Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?** (This question requires the permittee to perform a cost-benefit analysis, or at least a quantitative indication of the economic benefits and a qualitative description of the negative impacts expected from the permittee's operation. The latter should come from the answer to Question 1.)

Question 3: **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?** (This question requires the permittee to demonstrate having considered alternate technologies.)

Question 4: **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?** (This is the question that deals directly with siting criteria.)

Question 5: **Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?** (This question requires the permittee to demonstrate having considered the most stringent techniques for reducing or more efficiently handling waste.)

PART 70 OPERATING PERMIT APPLICATION COMPLETENESS CHECKLIST

Instructions: Complete this checklist and submit with the completed air permit application.

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.A Timely Submittal	Was a Copy of the Application Also Submitted to EPA?		X		N/A
517.B.1,2 Certification	Does the Application include a Certification by a Responsible Official?	X			Section 10 of the AAEAP
517.B.3 Certification	Does the Application Include Certification by a Professional Engineer or their Designee:	X			Section 10 of the AAEAP
517.D.1 Identifying Information	Does the Application Include:				
	1. Company Name, Physical and Mailing Address of Facility?	X			Section 1 of Report Text and Section 11 of the AAEAP
	2. Map showing Location of the Facility?	X			Figure 1
	3. Owner and Operator Names and Agent?	X			Section 1 of the AAEAP
	4. Name and Telephone Number of Plant Manager or Contact?	X			Section 11 of the AAEAP
517.D.2 SIC Codes, Source Categories	Does the Application Include a Description of the Source's Processes and Products?	X			Section 1 of the Report Text
	Does the Application Include the Source's SIC Code?	X			Section 5 of the AAEAP
	Does the Application Include EPA Source Category of HAPs if applicable?			X	
517.D.3,6 EIQ Sheets	Has an EIQ Sheet been Completed for each Emission Point whether an Area or Point Source?	X			Section 23 of the AAEAP
517.D.4 Monitoring Devices	Does the Application Include Identification and Description of Compliance Monitoring Devices or Activities?	X			Section 22 of the AAEAP
517.D.5 Revisions and Modifications Only	For Revisions or Modifications, Does the Application include a Description of the Proposed Change and any Resulting Change in Emissions?	X			Section 1 of the Report Text
517.D.7 General Information	Does the Application Include Information Regarding Fuels, Fuel Use, Raw Materials, Production Rates, and Operating Schedules as necessary to substantiate emission rates?	X			Section 23 of the AAEAP

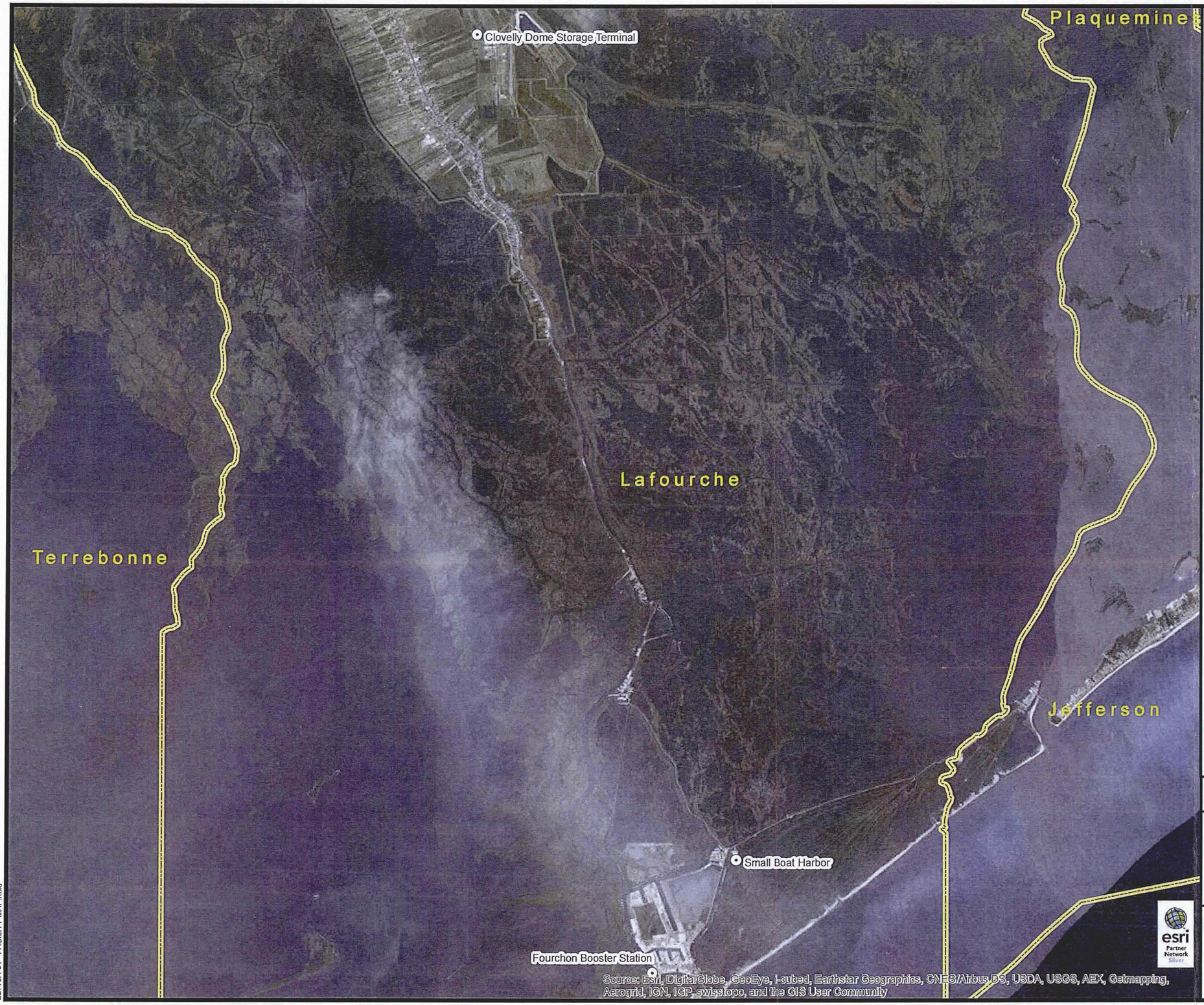
LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517 D.8 Operating Limitations	Has Information Regarding any Limitations on Source Operation or any Applicable Work Practice Standards been Identified?	X			Section 22 of the AAEAP
517.D.9 Calculations	Are Emission Calculations Provided?	X			Appendix A
517.D.10 Regulatory Review	Does the Application Include a Citation and Description of Applicable Louisiana and Federal Air Quality Requirements and Standards?	X			Section 22 of the AAEAP
517.D.11 Test Methods	Has a Description of or a Reference to Applicable Test Methods Used to Determine Compliance with Standards been Provided?	X			Section 22 of the AAEAP
517.D.12 Major Sources of TAPs	Does the Application include Information Regarding the Compliance History of Sources Owned or Operated by the Applicant (per LAC 33.III.5111)?			X	
517.D.13 Major Sources of TAPs	Does the Application include a Demonstration to show that the Source Meets all Applicable MACT and Ambient Air Standard Requirements?			X	
517.D.14 PSD Sources Only	If Required by DEQ, Does the Application Include Information Regarding the Ambient Air Impact for Criteria Pollutants as Required for the Source Impact Analysis per LAC 33:III.509.K, L, and M?			X	
517 D.15 PSD Sources Only	If Required by DEQ, Does the Application Include a Detailed Ambient Air Analysis?			X	
517.D.16, 18	Has any Additional Information been Provided?		X		
517.D.17 Fees	Has the Fee Code been Identified?	X			Section 5 of the AAEAP
	Is the Applicable Fee Included with the Application?	X			Attached
517.E.1 Additional Part 70 Requirements	Does the Certification Statement Include a Description of the Compliance Status of Each Emission Point in the Source with All Applicable Requirements?	X			Section 10 of the AAEAP
517E.2 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will continue to Comply with All Applicable Requirements with which the Source is in Compliance?	X			Section 10 of the AAEAP
517.E.3 Additional Part 70 Requirements	Does the Certification Statement Include a Statement that the Source will, on a timely basis, meet All Applicable Requirements that will Become Effective During the Permit Term?	X			Section 10 of the AAEAP

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
517.E.4 Additional Part 70 Requirements	Are there Applicable Requirements for which the Source is not in Compliance at the Time of Submittal?		X		
	Does the Application include a Compliance Plan Schedule?			X	
	Does the Schedule Include Milestone Dates for which Significant Actions will occur?			X	
	Does the Schedule Include Submittal Dates for Certified Progress Reports?			X	
517.E.5 Additional Part 70 Requirements Acid Rain	Is this Source Covered by the Federal Acid Rain Program?			X	
	Are the Requirements of LAC 33.III.517.E 1-4 included in the Acid Rain Portion of the Compliance Plan?			X	
517.E.6 Additional Part 70 Requirements	Have any Exemptions from any Applicable Requirements been Requested?	X			Section 22 of the AAEAP
	Is the List and explanations Provided?	X			Section 22 of the AAEAP
517.E.7 Additional Part 70 Requirements	Does the Application Include a Request for a Permit Shield?		X		
	Does the Request List those Federally Applicable Requirements for which the Shield is Requested along with the Corresponding Draft Permit Terms and conditions which are Proposed to Maintain Compliance?			X	
517.E.8 Additional Part 70 Requirements	Does the Application Identify and Reasonably Anticipated Alternative Operating Scenarios?			X	
	Does the Application include Sufficient Information to Develop permit Terms and Conditions for Each Scenario, Including Source Process and Emissions Data?			X	
517.F Confidentiality	Does the Application Include a Request for Non-Disclosure (Confidentiality)?			X	

LAC 33:III.	Completeness Questions Relative to the Part 70 Permit Application	Yes	No	NA	Location Within the Permit Application
525.B. Minor Permit Modifications	Does the Application Include a Listing of New Requirements Resulting for the Change?	X			Section 22 of the AAEAP
	Does the Application Include Certification by the Responsible Official that the Proposed Action Fits the Definition of a Minor Modification as per LAC 33:III.525.A.	X			Section 10 of the AAEAP
	Does the Certification also Request that Minor Modification Procedures be Used?	X			Section 4 of the AAEAP
	Does the Application, for Part 70 Sources, Include the Owner's Suggested Draft Permit and Completed Forms for the Permitting Authority to Use to Notify Affected States?		X		
La. R.S. 30:2018 – PSD/NNSR only	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the local governing authority at no cost to the local governing authority?		X		See Section 2.3 of the Report Text
	Has a copy of the answers to the questions posed in the Environmental Assessment Statement (Section 25) been sent to the designated public library at no cost to the designated public library?		X		See Section 2.3 of the Report Text

FIGURE 1

SITE LOCATION MAP



LAFOURCHE PARISH

N

S

0 10,000 20,000 30,000

Feet

Legend

PARISH BOUNDARY

FACILITY LOCATION

LOOP LLC
GALLIANO/LEEVILLE, LOUISIANA

TITLE V PERMIT MODIFICATION

SITE LOCATION MAP

LAFOURCHE PARISH

CK Associates Environmental Consultants

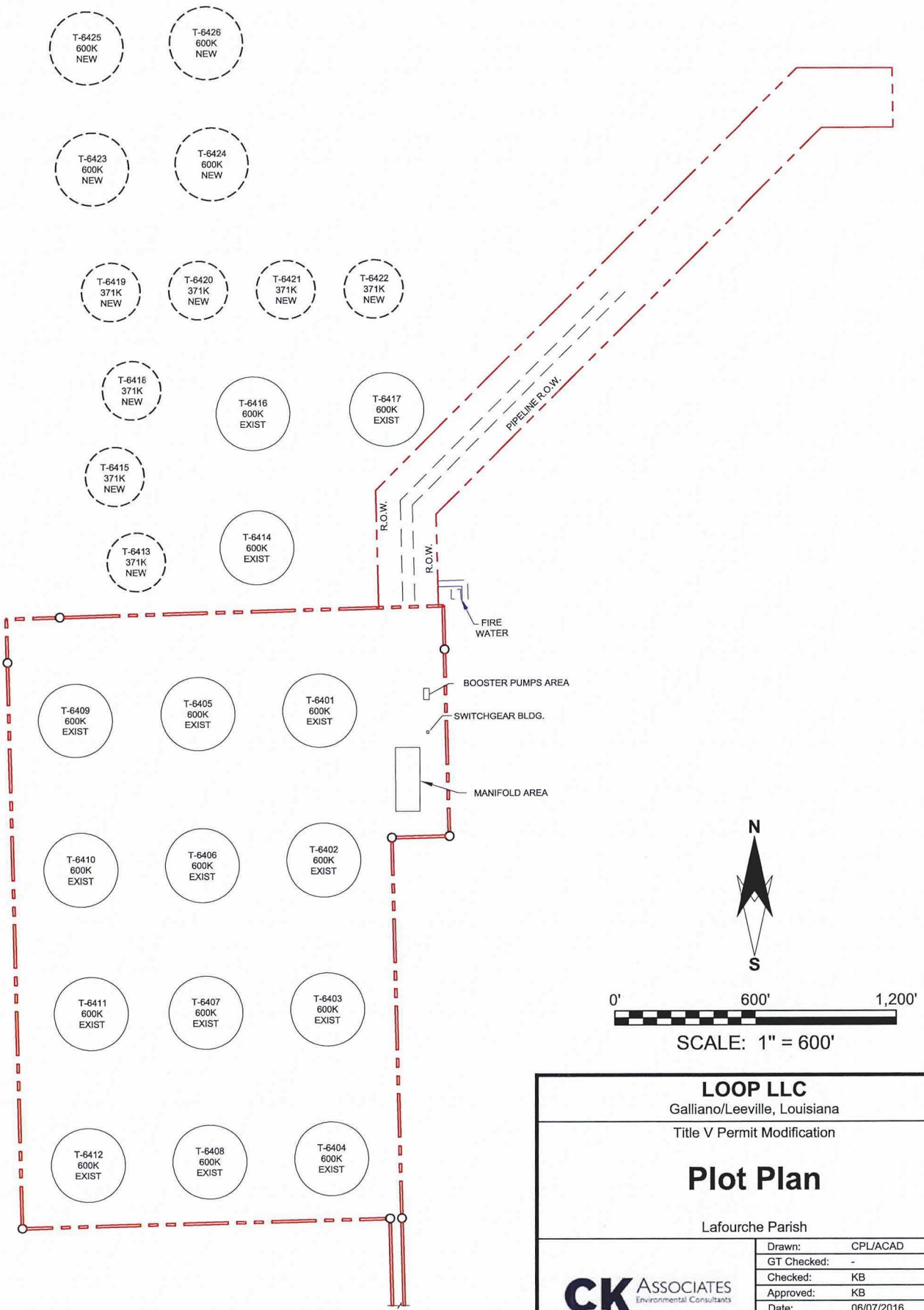
Drawn:	CPL/AM10.2.2
Checked:	JB
Approved:	JB
Date:	8/7/14
Dwg. No.:	B10475-01

FIGURE 1

B2779A-01 - FACILITY MAP.mxd

FIGURE 2

PLOT PLAN



LOOP LLC
Galliano/Leeville, Louisiana

Title V Permit Modification

Plot Plan

Lafourche Parish

CK Associates Environmental Consultants

Drawn:	CPL/ACAD
GT Checked:	-
Checked:	KB
Approved:	KB
Date:	06/07/2016
Dwg. No.:	A11465-02

Figure 2

APPENDIX A

EMISSIONS CALCULATIONS

CRUDE OIL STORAGE TANK CAP (CLOVELLY DOME)

Crude Oil Storage Tank CAP
THEORETICAL OPERATING SCENARIO EMISSIONS SUMMARY

Clovelly Dome, Lafourche Parish, Louisiana
LOOP LLC

Tanks in Current Permit:

Tank Throughput per Tank	*26,093*	*bbls/day*
Tank Throughput per Tank	*9.5*	*MMbbls/yr*
Number of Tanks	*15*	*310-ft diameter*
Number of Tanks	*6*	*243-ft diameter*

Proposed Tanks:

Tank Throughput per Tank	*27,397*	*bbls/day*
Tank Throughput per Tank	*10*	*MMbbls/yr*
Number of Tanks	*4*	*310-ft diameter*
Number of Tanks	*1*	*243-ft diameter*

Emission Summary for Tank CAP

Pollutant	Total Annual Emissions (tpy)	Average Hourly Emissions (lbs/hr)
TOTAL VOCs	411.19	93.88
2,2,4-Trimethylpentane	0.22	0.05
Benzene	2.41	0.55
Cumene (Isopropyl benzene)	0.03	0.01
Ethylbenzene	0.22	0.05
n-Hexane	2.55	0.58
Toluene	1.30	0.30
Xylenes	0.69	0.16

Emission Summary Per Currently Permitted 600,000 bbl Tank

Pollutant	Annual Throughput Per Tank (MMbbls)	Breathing Losses per tank (lb/yr)	Withdrawal Losses per tank (lb/yr)	Annual Operating Emissions (lbs/yr)	Landing Losses (lbs/event)	Landing Losses Events/yr	Degas/Clean Losses[1] (lbs/event)	Degas/Clean Losses Events/yr	Total Annual Emissions (tpy)
TOTAL VOCs	9.52	7,829.95	1,234.16	9,064.10	6,550.20	4	1,539	2	19.17
2,2,4-Trimethylpentane (Isooctane)				5.16	3.29		1.61		0.01
Benzene				53.11	38.24		18.68		0.12
Cumene (Isopropyl benzene)				1.58	0.289		0.15		0.002
Ethylbenzene				7.97	2.54		1.27		0.01
n-Hexane				54.04	41.08		19.99		0.13
Toluene				34.60	18.62		9.19		0.06
Xylenes				26.15	7.42		3.72		0.03
TOTAL TAP				182.62	111.47		54.60		0.37

[1] Note that Degas/Clean Losses shown here are a revision to the current permit (revised from one uncontrolled tank cleaning/yr to two controlled tank cleanings/yr).

Emission Summary Per Currently Permitted 371,000 bbl Tank

Pollutant	Annual Throughput Per Tank (MMbbls)	Breathing Losses per tank (lb/yr)	Withdrawal Losses per tank (lb/yr)	Annual Operating Emissions (lbs/yr)	Landing Losses (lbs/event)	Landing Losses Events/yr	Total Annual Emissions (tpy)
TOTAL VOCs	9.52	7,081.49	1,574.44	8,655.93	6,438.76	5	20.42
2,2,4-Trimethylpentane (Isooctane)				5.13	3.23		0.01
Benzene				50.79	37.59		0.12
Cumene (Isopropyl benzene)				1.89	0.28		0.002
Ethylbenzene				9.04	2.49		0.01
n-Hexane				50.71	40.38		0.13
Toluene				35.88	18.31		0.06
Xylenes				30.07	7.30		0.03
TOTAL TAP				183.49	109.57		0.37

Emission Summary Per Proposed 600,000 bbl Tank

Pollutant	Annual Throughput Per Tank (MMbbls)	Breathing Losses per tank (lb/yr)	Withdrawal Losses per tank (lb/yr)	Annual Operating Emissions (lbs/yr)	Total Annual Emissions (tpy)
TOTAL VOCs	10	7,829.95	1,295.86	9,125.81	4.56
2,2,4-Trimethylpentane (Isooctane)				5.22	0.003
Benzene				53.48	0.03
Cumene (Isopropyl benzene)				1.64	0.001
Ethylbenzene				8.22	0.004
n-Hexane				54.28	0.03
Toluene				35.22	0.02
Xylenes				27.01	0.01
TOTAL TAP				185.08	0.09

Emission Summary Per Proposed 371,000 bbl Tank

Pollutant	Annual Throughput Per Tank (MMbbls)	Breathing Losses per tank (lb/yr)	Withdrawal Losses per tank (lb/yr)	Annual Operating Emissions (lbs/yr)	Total Annual Emissions (tpy)
TOTAL VOCs	10	7,081.49	1,653.16	8,734.65	4.37
2,2,4-Trimethylpentane (Isooctane)				5.20	0.003
Benzene				51.26	0.03
Cumene (Isopropyl benzene)				1.97	0.001
Ethylbenzene				9.36	0.005
n-Hexane				51.02	0.03
Toluene				36.67	0.02
Xylenes				31.17	0.02
TOTAL TAP				186.64	0.09

NOTES:
Total VOCs are from an EPA TANKS 4.09d Program Emission Report.
The Clovelly Dome Storage Tanks store varied crude oil compositions to meet customer requirements.
Therefore, speciated emissions are per EPA TANKS 4.09d using Crude Oil RVP 8 to conservatively represent the stored products.

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Crude Oil Storage Tank 600,000 Proposed Tank
City:	Lafourche Parish
State:	Louisiana
Company:	LOOP LLC
Type of Tank:	External Floating Roof Tank
Description:	Crude Oil Storage Tank

Tank Dimensions

Diameter (ft):	310.00
Volume (gallons):	25,200,000.00
Turnovers:	16.67

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151
Roof Drain (3-in. Diameter)/90% Closed	6

Meterological Data used in Emissions Calculations: New Orleans, Louisiana (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Crude Oil Storage Tank 600,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil RVP 8	All	69.99	64.84	75.14	68.06	6.5139	N/A	N/A	50.0000			207.00	Option 4: RVP=8
1,2,4-Trimethylbenzene						0.0302	N/A	N/A	120.1900	0.0033	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.7891	N/A	N/A	114.2300	0.0010	0.0005	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.5308	N/A	N/A	78.1100	0.0060	0.0058	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.5780	N/A	N/A	84.1600	0.0070	0.0070	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1524	N/A	N/A	106.1700	0.0040	0.0004	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.4667	N/A	N/A	86.1700	0.0040	0.0063	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0693	N/A	N/A	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Toluene						0.4474	N/A	N/A	92.1300	0.0100	0.0028	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						7.2120	N/A	N/A	49.4912	0.9497	0.9759	220.76	
Xylene (-m)						0.1273	N/A	N/A	106.1700	0.0140	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Crude Oil Storage Tank 600,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

Annual Emission Calcaulations	
Rim Seal Losses (lb):	3,463.0095
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Average Wind Speed (mph):	8.1500
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.1447
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.5139
Tank Diameter (ft):	310.0000
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	1,295.8645
Annual Net Throughput (gal/yr.):	420,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	7.1000
Tank Diameter (ft):	310.0000
Roof Fitting Losses (lb):	4,366.9368
Value of Vapor Pressure Function:	0.1447
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	1,508.9409
Average Wind Speed (mph):	8.1500
Total Losses (lb):	9,125.8109

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4	1.60	0.00	0.00	18.5219
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	8.1033
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6	6.20	1.20	0.94	214.7406
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2	25.00	13.00	2.20	3,613.9909
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	1.6736
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38	1.30	0.08	0.65	170.2519
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151	0.53	0.11	0.13	291.8921
Roof Drain (3-in. Diameter)/90% Closed	6	1.80	0.14	1.10	47.7625

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Crude Oil Storage Tank 600,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil RVP 8	3,463.01	1,295.86	4,366.94	0.00	9,125.81
Hexane (-n)	21.72	5.18	27.38	0.00	54.28
2,2,4-Trimethylpentane (isooctane)	1.74	1.30	2.19	0.00	5.22
Benzene	20.22	7.78	25.49	0.00	53.48
1,2,4-Trimethylbenzene	0.22	4.28	0.28	0.00	4.77
Cyclohexane	24.31	9.07	30.66	0.00	64.04
Ethylbenzene	1.34	5.18	1.69	0.00	8.22
Isopropyl benzene	0.15	1.30	0.19	0.00	1.64
Xylene (-m)	3.92	18.14	4.95	0.00	27.01
Toluene	9.85	12.96	12.42	0.00	35.22
Unidentified Components	3,379.54	1,230.68	4,261.69	0.00	8,871.91

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Crude Oil Storage Tank 371,000 Proposed Tank
City:	Lafourche Parish
State:	Louisiana
Company:	LOOP LLC
Type of Tank:	External Floating Roof Tank
Description:	Crude Oil Storage Tank

Tank Dimensions

Diameter (ft):	243.00
Volume (gallons):	15,582,000.00
Turnovers:	26.95

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151
Roof Drain (3-in. Diameter)/90% Closed	6

Meterological Data used in Emissions Calculations: New Orleans, Louisiana (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Crude Oil Storage Tank 371,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil RVP 8	All	69.99	64.84	75.14	68.06	6.5139	N/A	N/A	50.0000			207.00	Option 4: RVP=8
1,2,4-Trimethylbenzene						0.0302	N/A	N/A	120.1900	0.0033	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.7891	N/A	N/A	114.2300	0.0010	0.0005	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.5308	N/A	N/A	78.1100	0.0060	0.0058	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.5780	N/A	N/A	84.1600	0.0070	0.0070	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1524	N/A	N/A	106.1700	0.0040	0.0004	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.4667	N/A	N/A	86.1700	0.0040	0.0063	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0693	N/A	N/A	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Toluene						0.4474	N/A	N/A	92.1300	0.0100	0.0028	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						7.2120	N/A	N/A	49.4912	0.9497	0.9759	220.76	
Xylene (-m)						0.1273	N/A	N/A	106.1700	0.0140	0.0011	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Crude Oil Storage Tank 371,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

Annual Emission Calcaulations	
Rim Seal Losses (lb):	2,714.5526
Seal Factor A (lb-mole/ft-yr):	0.6000
Seal Factor B (lb-mole/ft-yr (mph)^n):	0.4000
Average Wind Speed (mph):	8.1500
Seal-related Wind Speed Exponent:	1.0000
Value of Vapor Pressure Function:	0.1447
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	6.5139
Tank Diameter (ft):	243.0000
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Withdrawal Losses (lb):	1,653.1605
Annual Net Throughput (gal/yr.):	420,000,000.0000
Shell Clingage Factor (bbl/1000 sqft):	0.0060
Average Organic Liquid Density (lb/gal):	7.1000
Tank Diameter (ft):	243.0000
Roof Fitting Losses (lb):	4,366.9368
Value of Vapor Pressure Function:	0.1447
Vapor Molecular Weight (lb/lb-mole):	50.0000
Product Factor:	0.4000
Tot. Roof Fitting Loss Fact.(lb-mole/yr):	1,508.9409
Average Wind Speed (mph):	8.1500
Total Losses (lb):	8,734.6499

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4	1.60	0.00	0.00	18.5219
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	8.1033
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6	6.20	1.20	0.94	214.7406
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2	25.00	13.00	2.20	3,613.9909
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	1.6736
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38	1.30	0.08	0.65	170.2519
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151	0.53	0.11	0.13	291.8921
Roof Drain (3-in. Diameter)/90% Closed	6	1.80	0.14	1.10	47.7625

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

Crude Oil Storage Tank 371,000 Proposed Tank - External Floating Roof Tank
Lafourche Parish, Louisiana

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil RVP 8	2,714.55	1,653.16	4,366.94	0.00	8,734.65
Hexane (-n)	17.02	6.61	27.38	0.00	51.02
2,2,4-Trimethylpentane (isooctane)	1.36	1.65	2.19	0.00	5.20
Benzene	15.85	9.92	25.49	0.00	51.26
1,2,4-Trimethylbenzene	0.17	5.46	0.28	0.00	5.90
Cyclohexane	19.06	11.57	30.66	0.00	61.29
Ethylbenzene	1.05	6.61	1.69	0.00	9.36
Isopropyl benzene	0.12	1.65	0.19	0.00	1.97
Xylene (-m)	3.08	23.14	4.95	0.00	31.17
Toluene	7.72	16.53	12.42	0.00	36.67
Unidentified Components	2,649.13	1,570.01	4,261.69	0.00	8,480.82

STORAGE TANK LANDING LOSSES

LOOP LLC

Assumptions:

Loss from Emptying and Refilling EFR, Partial Liquid Heel Tanks

Description	Quantity	Unit	Basis
n_d = number of days roof is landed	1	day	Minimum Basis for Reference Methodology
Mv = Vapor Molecular Weight	50.00	lb/lb-mole	TANKS 4.0.9d Default
RVP = Reid Vapor Pressure	8.00	psia	TANKS 4.0.9d Default
W_L = Liquid Density	7.10	lb/gal	TANKS 4.0.9d Default
H_L = Height of Liquid Heel	0.50	ft	Conservative Estimate
Pa = Atmospheric Pressure	14.70	psia	Standard Atmospheric Pressure
R = Ideal Gas Constant	10.73	psia-ft^3 per lb-mole°R	

Site Specific Data:

Description	Quantity	Unit	Basis
T_{max} = Daily Maximum Ambient Temperature	537.70	°R, Annual Average for New Orleans, Louisiana	7.1, Table 7.1-7
T_{min} = Daily Minimum Ambient Temperature	518.70	°R, Annual Average for New Orleans, Louisiana	7.1, Table 7.1-7
a = Tank Paint Solar Absorbance	0.17	White Paint Color	7.1, Table 7.1-6
I = Insolation	1437	Btu/ft^2d, Annual Average New Orleans, Louisiana	7.1, Table 7.1-7

Given:

Description	Quantity	Unit
D = Tank Diameter	310.00	ft
Hr = Roof Leg Setting	3.00	ft

Other Calculated Parameters:

Description	Quantity	Unit, [Formula]	Basis
A = Constant in Vapor Pressure Equation	10.81	dimensionless, [A = 12.82-0.9672*ln(RVP)]	7.1, Figure 7.1-16
B = Constant in Vapor Pressure Equation	4732.40	°R, [B = 7261-1216*ln(RVP)]	7.1, Figure 7.1-16
P= True Vapor Pressure	6.57	psia, [$P = EXP(A-(B/T_{LA}))$]	7.1, Equation 1-12a
P*= Vapor Pressure Function	0.15	dimensionless, [$P/Pa/(1+(1-(P/Pa))^{0.5})^2$]	Equation 12, API Document
T_{avg} = Daily Average Ambient Temperature	528.20	°R, [$T_{avg}=(T_{max}+T_{min})/2$]	7.1, Equation 1-14
deltaT$_V$ = Daily Vapor Temperature Range	20.52	°R, [$0.72(T_{max} - T_{min}) + 0.028al$]	Equation 7, API Document
T_{LA} = Daily Average Liquid Surface Temperature	530.14	°R, [$0.44T_{avg} + 0.56T_B + 0.0079al$]	7.1, Equation 1-13
T_B = Liquid Bulk Temperature	528.22	°R, [$T_B=T_{avg}+6*a-1$]	7.1, Equation 1-15
h_v = Height of Vapor Space	2.50	ft, [height of deck above tank bottom - height of liquid heel]	Equation 25, API Document
K_S = Standing Idle Saturation Factor	0.53	dimensionless, [$1/1 + 0.053(Ph_v)$]	Equation 8, API Document
K_E = Vapor Space Expansion Factor	0.18	dimensionless, [$deltaT_V/T_{avg}(1+0.5BP/T_{avg}(Pa-P)$]	Equation 6, API Document
A_f = Floor Area	75,477	ft^2, [$A_f = \pi *(D/2)^2$]	
V_V = Vapor Volume	188,692	ft^3, [$V_V = A_f*h_v$]	7.1, Equation 2-32
C_{sf} = Filling Saturation Correction Factor	0.96	dimensionless	Equation 23, API document

STORAGE TANK LANDING LOSSES

LOOP LLC

LANDING LOSS EMISSIONS PER EVENT:

	Quantity	Unit, Formula	Basis
S = Filling Saturation Factor	**0.5**	dimensionless	Partial Liquid Heel
L_S = Standing Idle Loss	**1,298**	lb, $[L_S = 0.57 n_d D(P^*)M_V]$	Equation 14 & 10, API Document
L_F = Refilling Loss	**5,252**	lb, $[L_F = (PV_V/RT_{avg})M_V(C_{sf}S)]$	Equation 21, API Document
L_T = Total Roof Landing and Refilling Loss	**6,550**	lb, $[L_T = L_S+L_F]$	Equation 1, API Document

SPECIATION (TANKS 4.09d Crude Oil RVP 8)		Vapor Mass Fraction	EMISSIONS (lb)
Benzene		0.0058	38.24
Cumene (Isopropyl benzene)		0.0000	0.289
Ethylbenzene		0.0004	2.54
n-Hexane		0.0063	41.08
Toluene		0.0028	18.62
Xylenes		0.0011	7.42
Iso-octane		0.0005	3.29
	TOTAL TAP	**0.0170**	**111.47**
1,2,4-Trimethylbenzene		0.0001	0.415
Cyclohexane		0.0070	45.99
Unspeciated VOCs		0.9759	6392.32
	TOTAL VOC	1.0000	**6550.20**

REFERENCES:

AP-42 Section 7.1, Organic Liquid Storage Tanks, November 2006

Evaporative Loss from Storage Tank Floating Roof Landings, Technical Report 2567, American Petroleum Institute, April 2005

STORAGE TANK LANDING LOSSES

LOOP LLC

Assumptions:

Loss from Emptying and Refilling EFR, Partial Liquid Heel Tanks

Description	Quantity	Unit	Basis
n_d = number of days roof is landed	1	day	Minimum Basis for Reference Methodology
Mv = Vapor Molecular Weight	50.00	lb/lb-mole	TANKS 4.0.9d Default
RVP = Reid Vapor Pressure	8.00	psia	TANKS 4.0.9d Default
W_L = Liquid Density	7.10	lb/gal	TANKS 4.0.9d Default
H_L = Height of Liquid Heel	0.50	ft	Conservative Estimate
Pa = Atmospheric Pressure	14.70	psia	Standard Atmospheric Pressure
R = Ideal Gas Constant	10.73	psia-ft^3 per lb-mole°R	

Site Specific Data:

Description	Quantity	Unit	Basis
T_{max} = Daily Maximum Ambient Temperature	537.70	°R, Annual Average for New Orleans, Louisiana	7.1, Table 7.1-7
T_{min} = Daily Minimum Ambient Temperature	518.70	°R, Annual Average for New Orleans, Louisiana	7.1, Table 7.1-7
a = Tank Paint Solar Absorbance	0.17	White Paint Color	7.1, Table 7.1-6
I = Insolation	1437	Btu/ft^2d, Annual Average New Orleans, Louisiana	7.1, Table 7.1-7

Given:

Description	Quantity	Unit
D = Tank Diameter	243.00	ft
Hr = Roof Leg Setting	4.67	ft

Other Calculated Parameters:

Description	Quantity	Unit, [Formula]	Basis
A = Constant in Vapor Pressure Equation	10.81	dimensionless, [A = 12.82-0.9672*ln(RVP)]	7.1, Figure 7.1-16
B = Constant in Vapor Pressure Equation	4732.40	°R, [B = 7261-1216*ln(RVP)]	7.1, Figure 7.1-16
P= True Vapor Pressure	6.57	psia, [$P = EXP(A-(B/T_{LA}))$]	7.1, Equation 1-12a
P*= Vapor Pressure Function	0.15	dimensionless, [$P/Pa/(1+(1-(P/Pa))^{0.5})^2$]	Equation 12, API Document
T_{avg} = Daily Average Ambient Temperature	528.20	°R, [$T_{avg}=(T_{max}+T_{min})/2$]	7.1, Equation 1-14
deltaT_V = Daily Vapor Temperature Range	20.52	°R, [$0.72(T_{max} - T_{min}) + 0.028al$]	Equation 7, API Document
T_{LA} = Daily Average Liquid Surface Temperature	530.14	°R, [$0.44T_{avg} + 0.56T_B + 0.0079al$]	7.1, Equation 1-13
T_B = Liquid Bulk Temperature	528.22	°R, [$T_B=T_{avg}+6*a-1$]	7.1, Equation 1-15
h_v = Height of Vapor Space	4.17	ft, [height of deck above tank bottom - height of liquid heel]	Equation 25, API Document
K_S = Standing Idle Saturation Factor	0.41	dimensionless, [$1/1 + 0.053(Ph_v)$]	Equation 8, API Document
K_E = Vapor Space Expansion Factor	0.18	dimensionless, [$deltaT_V/T_{avg}(1+0.5BP/T_{avg}(Pa-P)$]	Equation 6, API Document
A_f = Floor Area	46,377	ft^2, [$A_f = \pi *(D/2)^2$]	
V_V = Vapor Volume	193,237	ft^3, [$V_V = A_f*h_v$]	7.1, Equation 2-32
C_{sf} = Filling Saturation Correction Factor	0.97	dimensionless	Equation 23, API document

STORAGE TANK LANDING LOSSES

LOOP LLC

LANDING LOSS EMISSIONS PER EVENT:

	Quantity	Unit, Formula	Basis
S = Filling Saturation Factor	**0.5**	dimensionless	Partial Liquid Heel
L_S = Standing Idle Loss	**1,017**	lb, $[L_S = 0.57 n_d D(P^*)M_V]$	Equation 14 & 10, API Document
L_F = Refilling Loss	**5,421**	lb, $[L_F = (PV_V/RT_{avg})M_V(C_{sf}S)]$	Equation 21, API Document
L_T = Total Roof Landing and Refilling Loss	**6,439**	lb, $[L_T = L_S+L_F]$	Equation 1, API Document

SPECIATION (TANKS 4.09d Crude Oil RVP 8)		Vapor Mass Fraction	EMISSIONS (lb)
Benzene		0.0058	37.59
Cumene (Isopropyl benzene)		0.0000	0.284
Ethylbenzene		0.0004	2.49
n-Hexane		0.0063	40.38
Toluene		0.0028	18.31
Xylenes		0.0011	7.30
Iso-octane		0.0005	3.23
	TOTAL TAP	**0.0170**	**109.57**
1,2,4-Trimethylbenzene		0.0001	0.408
Cyclohexane		0.0070	45.20
Unspeciated VOCs		0.9759	6283.58
	TOTAL VOC	1.0000	**6438.76**

REFERENCES:

AP-42 Section 7.1, Organic Liquid Storage Tanks, November 2006

Evaporative Loss from Storage Tank Floating Roof Landings, Technical Report 2567, American Petroleum Institute, April 2005

STORAGE TANK CLEANING LOSSES
LOOP LLC

Source Description: Storage Tank Degassing & Cleaning

At a designated frequency, LOOP is required to empty, degas, and clean the storage tanks at the facility. This calculation estimates the emissions from this activity.

Method of Estimating Emissions:
http://www.epa.gov/ttnchie1/faq/tanksfaq.html#13

HOW CAN I ESTIMATE EMISSIONS FROM DEGASSING AND CLEANING OPERATIONS DURING A TANK TURNAROUND?

The following procedure can be used to approximate emissions from each step of the operation:

Emptying (degassing)
1. For a fixed roof tank, calculate emissions from one turnover with the turnover factor (Kn) = 1 to account for vapors displaced during filling and then add the emissions from 1 turnover calculated as if the tank had a floating roof to account for clingage.
2. For a floating roof tank, calculate emissions for one turnover then add the emissions from the tank assuming it has a fixed roof with a height equal to the height of the legs (about 6 or 7 ft.) to approximate the vapor displaced from the space under the floating roof.

Cleaning (sludge handling)
Most wet sludges are about 80% to 90% liquid by weight. A conservative approach for estimating emissions is to assume the sludge is 80% liquid. The remainder is assumed to be VOC and emitted. As an alternative, the actual sludge moisture content can be determined.

Given:

Tank Type: external floating roof (EFR) tank
Tank Diameter (feet): 310

Assumptions:
There will be only two EFR tanks cleaned per year.
Worst case is a 310' diameter tank with 1 inch of product remaining.
Landed roof leg height is 6.5 feet.
Month of landing is July for worst case temperatures.
Assuming wet sludge is 85% liquid by weight.
Vapor combustor with 98% control efficiency for VOCs.

Emptying (degassing)

Losses from TANKS 4.09d for a 310' diameter tank, one turnover:

Pollutant	Annual (lb/yr)[1]	Average (lb/hr)	Annual (tpy)
VOC	94.69	0.01	0.05
2,2,4-Trimethylpentane	0.09	0.00001	0.00004
Benzene	0.57	0.0001	0.0003
Cumene	0.08	0.00001	0.00004
Ethylbenzene	0.32	0.00004	0.0002
n-Hexane	0.42	0.00005	0.0002
Toluene	0.83	0.0001	0.0004
Xylenes	1.11	0.0001	0.001

[1] Emissions are the sum of working losses and one day of standing losses.

Losses from TANKS 4.09d for a 310' diameter tank with a roof landed height of 6.5 feet:

Pollutant	Annual (lb/yr)	Average (lb/hr)	Annual (tpy)
VOC	23,818.34	2.72	11.91
2,2,4-Trimethylpentane	13.57	0.002	0.01
Benzene	156.90	0.02	0.08
Cumene	1.26	0.0001	0.001
Ethylbenzene	10.88	0.001	0.01
n-Hexane	166.79	0.02	0.08
Toluene	78.04	0.01	0.04
Xylenes	31.88	0.004	0.02

Cleaning (sludge handling)

Diameter (feet):	310
Radius (feet):	155
Radius Squared (ft2):	24,025
Volume (ft3):	6,289.73
Lb/ft3:	56.2
Weight (lbs):	353,482.84
Assume 15% evaporates (tons VOC emitted):	26.51

VOC TAP Speciation	Liquid Mass Fraction[1]	Annual (tpy)
2,2,4-Trimethylpentane	0.001	0.01
Benzene	0.006	0.15
Cumene	0.00004	0.001
Ethylbenzene	0.0004	0.01
n-Hexane	0.006	0.17
Toluene	0.003	0.08
Xylenes	0.001	0.03

(1) VOC TAP Speciation Profile from TANKS 4.09d for Crude Oil (RVP 8)

Total Emissions from Two Tank Cleanings:

Pollutant	Uncontrolled Average (lb/hr)	Uncontrolled Annual (tpy)	Controlled Average (lb/hr)	Controlled Annual (tpy)
VOC	17.57	76.94	0.35	1.54
2,2,4-Trimethylpentane	0.01	0.04	0.0002	0.001
Benzene	0.11	0.47	0.002	0.01
Cumene	0.001	0.004	0.00002	0.0001
Ethylbenzene	0.01	0.03	0.0001	0.001
n-Hexane	0.11	0.50	0.002	0.01
Toluene	0.05	0.23	0.001	0.005
Xylenes	0.02	0.09	0.0004	0.002

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Degassing Part A
City:	Lafourche Parish
State:	Louisiana
Company:	LOOP LLC
Type of Tank:	External Floating Roof Tank
Description:	Crude Oil Storage Tank

Tank Dimensions

Diameter (ft):	310.00
Volume (gallons):	25,200,000.00
Turnovers:	1.00

Paint Characteristics

Internal Shell Condition:	Light Rust
Shell Color/Shade:	White/White
Shell Condition	Good

Roof Characteristics

Type:	Pontoon
Fitting Category	Detail

Tank Construction and Rim-Seal System

Construction:	Welded
Primary Seal:	Mechanical Shoe
Secondary Seal	Rim-mounted

Deck Fitting/Status	Quantity
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4
Automatic Gauge Float Well/Bolted Cover, Gasketed	1
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151
Roof Drain (3-in. Diameter)/90% Closed	6

Meterological Data used in Emissions Calculations: New Orleans, Louisiana (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Degassing Part A - External Floating Roof Tank
Lafourche Parish, Louisiana

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil RVP 8	Jul	76.57	71.25	81.89	68.06	7.2689	N/A	N/A	50.0000			207.00	Option 4: RVP=8
1,2,4-Trimethylbenzene						0.0387	N/A	N/A	120.1900	0.0033	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.9432	N/A	N/A	114.2300	0.0010	0.0005	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.8175	N/A	N/A	78.1100	0.0060	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.8663	N/A	N/A	84.1600	0.0070	0.0074	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1890	N/A	N/A	106.1700	0.0040	0.0004	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.8981	N/A	N/A	86.1700	0.0040	0.0066	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0873	N/A	N/A	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Toluene						0.5424	N/A	N/A	92.1300	0.0100	0.0031	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						8.0405	N/A	N/A	49.4564	0.9497	0.9743	220.76	
Xylene (-m)						0.1582	N/A	N/A	106.1700	0.0140	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Degassing Part A - External Floating Roof Tank
Lafourche Parish, Louisiana

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Rim Seal Losses (lb):							264.1268					
Seal Factor A (lb-mole/ft-yr):							0.6000					
Seal Factor B (lb-mole/ft-yr (mph)^n):							0.4000					
Average Wind Speed (mph):							6.1000					
Seal-related Wind Speed Exponent:							1.0000					
Value of Vapor Pressure Function:							0.1682					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							7.2689					
Tank Diameter (ft):							310.0000					
Vapor Molecular Weight (lb/lb-mole):							50.0000					
Product Factor:							0.4000					
Withdrawal Losses (lb):							77.7519					
Net Throughput (gal/mo.):							25,200,000.0000					
Shell Clingage Factor (bbl/1000 sqft):							0.0060					
Average Organic Liquid Density (lb/gal):							7.1000					
Tank Diameter (ft):							310.0000					
Roof Fitting Losses (lb):							260.9663					
Value of Vapor Pressure Function:							0.1682					
Vapor Molecular Weight (lb/lb-mole):							50.0000					
Product Factor:							0.4000					
Tot. Roof Fitting Loss Fact.(lb-mole/yr):							931.1234					
Average Wind Speed (mph):							6.1000					
Total Losses (lb):							602.8450					

Roof Fitting/Status	Quantity	Roof Fitting Loss Factors KFa(lb-mole/yr)	KFb(lb-mole/(yr mph^n))	m	Losses(lb)
Access Hatch (24-in. Diam.)/Bolted Cover, Gasketed	4	1.60	0.00	0.00	1.8281
Automatic Gauge Float Well/Bolted Cover, Gasketed	1	2.80	0.00	0.00	0.7998
Vacuum Breaker (10-in. Diam.)/Weighted Mech. Actuation, Gask.	6	6.20	1.20	0.94	18.6754
Unslotted Guide-Pole Well/Gasketed Sliding Cover	2	25.00	13.00	2.20	195.3087
Gauge-Hatch/Sample Well (8-in. Diam.)/Weighted Mech. Actuation, Gask.	1	0.47	0.02	0.97	0.1576
Roof Leg (3-in. Diameter)/Adjustable, Pontoon Area, Gasketed	38	1.30	0.08	0.65	16.3418
Roof Leg (3-in. Diameter)/Adjustable, Center Area, Gasketed	151	0.53	0.11	0.13	28.5902
Roof Drain (3-in. Diameter)/90% Closed	6	1.80	0.14	1.10	4.2696

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: July

Degassing Part A - External Floating Roof Tank
Lafourche Parish, Louisiana

	Losses(lbs)				
Components	Rim Seal Loss	Withdrawl Loss	Deck Fitting Loss	Deck Seam Loss	Total Emissions
Crude Oil RVP 8	264.13	77.75	260.97	0.00	602.84
1,2,4-Trimethylbenzene	0.02	0.26	0.02	0.00	0.29
2,2,4-Trimethylpentane (isooctane)	0.14	0.08	0.14	0.00	0.36
Benzene	1.64	0.47	1.62	0.00	3.73
Cyclohexane	1.97	0.54	1.94	0.00	4.45
Ethylbenzene	0.11	0.31	0.11	0.00	0.54
Hexane (-n)	1.74	0.31	1.72	0.00	3.78
Isopropyl benzene	0.01	0.08	0.01	0.00	0.10
Toluene	0.82	0.78	0.81	0.00	2.40
Unidentified Components	257.34	73.84	254.26	0.00	585.44
Xylene (-m)	0.33	1.09	0.33	0.00	1.75

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	Degassing Part B
City:	Lafourche Parish
State:	Louisiana
Company:	LOOP LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Crude Oil Storage Tank

Tank Dimensions

Shell Height (ft):	6.50
Diameter (ft):	310.00
Liquid Height (ft) :	6.50
Avg. Liquid Height (ft):	3.25
Volume (gallons):	3,669,935.00
Turnovers:	1.00
Net Throughput(gal/yr):	3,669,935.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.00

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: New Orleans, Louisiana (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

Degassing Part B - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Crude Oil RVP 8	Jul	76.57	71.25	81.89	68.06	7.2689	6.6543	7.9266	50.0000			207.00	Option 4: RVP=8
1,2,4-Trimethylbenzene						0.0387	0.0317	0.0469	120.1900	0.0033	0.0001	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
2,2,4-Trimethylpentane (isooctane)						0.9432	0.8170	1.0852	114.2300	0.0010	0.0005	114.23	Option 2: A=6.8118, B=1257.84, C=220.74
Benzene						1.8175	1.5829	2.0801	78.1100	0.0060	0.0062	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Cyclohexane						1.8663	1.6305	2.1294	84.1600	0.0070	0.0074	84.16	Option 2: A=6.841, B=1201.53, C=222.65
Ethylbenzene						0.1890	0.1589	0.2237	106.1700	0.0040	0.0004	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.8981	2.5454	3.2898	86.1700	0.0040	0.0066	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Isopropyl benzene						0.0873	0.0725	0.1047	120.2000	0.0010	0.0000	120.20	Option 2: A=6.93666, B=1460.793, C=207.78
Toluene						0.5424	0.4645	0.6311	92.1300	0.0100	0.0031	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						8.0405	8.0225	8.0227	49.4564	0.9497	0.9743	220.76	
Xylene (-m)						0.1582	0.1328	0.1877	106.1700	0.0140	0.0013	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

Degassing Part B - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

Month:	January	February	March	April	May	June	July	August	September	October	November	December
Standing Losses (lb):							44,743.7888					
Vapor Space Volume (cu ft):							245,299.4811					
Vapor Density (lb/cu ft):							0.0632					
Vapor Space Expansion Factor:							0.2098					
Vented Vapor Saturation Factor:							0.4440					
Tank Vapor Space Volume:												
Vapor Space Volume (cu ft):							245,299.4811					
Tank Diameter (ft):							310.0000					
Vapor Space Outage (ft):							3.2500					
Tank Shell Height (ft):							6.5000					
Average Liquid Height (ft):							3.2500					
Roof Outage (ft):							0.0000					
Roof Outage (Cone Roof)												
Roof Outage (ft):							0.0000					
Roof Height (ft):							0.0000					
Roof Slope (ft/ft):							0.0000					
Shell Radius (ft):							155.0000					
Vapor Density												
Vapor Density (lb/cu ft):							0.0632					
Vapor Molecular Weight (lb/lb-mole):							50.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							7.2689					
Daily Avg. Liquid Surface Temp. (deg. R):							536.2398					
Daily Average Ambient Temp. (deg. F):							81.8500					
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):							10.731					
Liquid Bulk Temperature (deg. R):							527.7275					
Tank Paint Solar Absorptance (Shell):							0.1700					
Tank Paint Solar Absorptance (Roof):							0.1700					
Daily Total Solar Insulation Factor (Btu/sqft day):							1,819.5435					
Vapor Space Expansion Factor												
Vapor Space Expansion Factor:							0.2098					
Daily Vapor Temperature Range (deg. R):							21.2610					
Daily Vapor Pressure Range (psia):							1.2724					
Breather Vent Press. Setting Range(psia):							0.0000					
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):							7.2689					
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):							6.6543					
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):							7.9266					
Daily Avg. Liquid Surface Temp. (deg R):							536.2398					
Daily Min. Liquid Surface Temp. (deg R):							530.9246					
Daily Max. Liquid Surface Temp. (deg R):							541.5551					
Daily Ambient Temp. Range (deg. R):							17.5000					
Vented Vapor Saturation Factor												
Vented Vapor Saturation Factor:							0.4440					
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):							7.2689					
Vapor Space Outage (ft):							3.2500					

Working Losses (lb):	23,818.3353
Vapor Molecular Weight (lb/lb-mole):	50.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	7.2689
Net Throughput (gal/mo.):	3,669,935.0000
Annual Turnovers:	1.0000
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	3,669,935.0000
Maximum Liquid Height (ft):	6.5000
Tank Diameter (ft):	310.0000
Working Loss Product Factor:	0.7500
Total Losses (lb):	68,562.1241

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: July

Degassing Part B - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Crude Oil RVP 8	23,818.34	44,743.79	68,562.12
1,2,4-Trimethylbenzene	1.73	3.25	4.98
2,2,4-Trimethylpentane (isooctane)	12.80	24.04	36.83
Benzene	147.94	277.91	425.84
Cyclohexane	177.22	332.91	510.13
Ethylbenzene	10.25	19.26	29.52
Hexane (-n)	157.26	295.42	452.68
Isopropyl benzene	1.18	2.23	3.41
Toluene	73.59	138.23	211.82
Unidentified Components	23,206.31	43,594.08	66,800.39
Xylene (-m)	30.05	56.46	86.51

EPN 1-16, STANDBY GENERATOR (CLOVELLY DOME)

Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Engine Data

TEMPO ID	EPN	Description	Fuel Type	Brake Hp	Annual Operating Hours	Specific Fuel Consumption (Btu/hp-hr)[a,d]	Heat Input (MMBtu/hr)[b]	Annual Heat Rate (MMBtu/yr)[c]
EQT0009	15-78	Fourchon Booster Station - Standby Generator	Diesel	805	100	7,000	5.64	564
EQT0011	17-78	Operations Center Standby Generator	Diesel	671	100	7,000	4.70	470
EQT0012	18-78	Emergency Crude Transfer Pump (Clovelly Dome)	Diesel	860	100	7,000	6.02	602
EQT0014	20-78	Clovelly Fire Pump	Diesel	274	100	7,000	1.92	192
EQT0015	21-78	Standby Generator - Brine Storage Reservoir (Clovelly Dome)	Diesel	108	100	7,000	0.76	76
EQT0018	35-88	Fire School Pump (Clovelly Dome)	Diesel	400	100	7,000	2.80	280
EQT0019	38-91	Operations Center - Fire Pump (Clovelly Dome)	Diesel	500	100	7,000	3.50	350
EQT0020	5-99	Crude Oil Tankfarm Firewater Pump (Clovelly Dome)	Diesel	1,100	100	7,000	7.70	770
EQT0021	1-07	470 bhp Emergency Generator (Small Boat Harbor)	Diesel	470	100	7,000	3.29	329
EQT0022	2-07	470 bhp Emergency Generator (Tank Facility)	Diesel	470	100	7,000	3.29	329
EQT0023	3-07	671 bhp Emergency Generator (Clovelly Dome)	Diesel	671	100	7,000	4.70	470
EQT0024	4-07	671 bhp Emergency Generator (Clovelly Control Room)	Diesel	671	100	7,000	4.70	470
EQT0025	5-07	268 bhp Emergency Generator (OC Warehouse)	Diesel	268	100	7,000	1.88	188
EQT0026	6-07	168 bhp Emergency Generator (LOCAP)	Diesel	168	100	7,000	1.18	118
EQT0047	1-10	520 hp Emergency Generator	Diesel	520	100	6,496	3.38	338
TBD	1-16	Standby Generator (Clovelly Dome)	Diesel	671	100	7,000	4.70	470

[a] Given that specific data is unavailable for these engines (except for EPN 1-10), this calculation uses the average brake-specific fuel consumption from AP-42 Table 3.3-1, Footnote a.

[b] calculated; (Btu/hp-hr * hp) / 1,000,000 (except for EPN 20-78 for which the Hp is back-calculated)

[c] calculated; MMBtu/hr * hr/yr

[d] For EPN 1-10, the Specific Fuel Consumption is calculated as follows: 24.3 gal/hr / 520 Hp * 139,000 Btu/gal. The fuel consumption (gal/hr) is per LOOP and the Btu/gal for diesel was taken from http://www.engineeringtoolbox.com/energy-content-d_868.html.

Calculation Methodology:
Average Hourly Rate [lb/hr] = Horsepower [hp] x AP-42 Emission Factor [lb/hp-hr]
Max Hourly Rate [lb/hr] = Average Hourly Rate [lb/hr]
Annual Emission Rate [tpy] = Average Hourly Rate [lb/hr] / Conversion Factor [2000 lb/ton] x Annual Operating Hours

References:
Emission Factors for EPN 1-10 for PM_{10}, NO_x, CO, and VOC were provided by the vendor (Cummins Exhaust Data, full standby emission rates) in g/hp-hr.
EPA AP-42 Chapter 3.3 Gasoline and Diesel Industrial Engines, Table 3.3-1, Table 3.3-2, October 1996
EPA AP-42 Chapter 3.4 Large Stationary and All Stationary Dual-fuel Engines, Table 3.4-1, Table 3.4-3, October 1996
The Toxic Air Pollutant emission factors that are shown below are those with E-4 and greater. Those smaller than E-4 were omitted as they all generate annual ton/yr < 0.0005, which per LDEQ policy manual, can be excluded for any emissions unit.

Criteria Pollutants Emissions Factors

Pollutant	Source	Emission Factor (lb/hp-hr)
PM10	AP-42 Table 3.3-1 (<600 Hp)	0.002
SO2	AP-42 Table 3.3-1 (<600 Hp)	0.002
NOx	AP-42 Table 3.3-1 (<600 Hp)	0.031
CO	AP-42 Table 3.3-1 (<600 Hp)	0.007
VOC	AP-42 Table 3.3-1 (<600 Hp)	0.002
PM10	AP-42 Table 3.4-1 (>600 Hp)	0.0007
SO2	AP-42 Table 3.4-1 (>600 Hp)[d]	0.0004
NOx	AP-42 Table 3.4-1 (>600 Hp)	0.024
CO	AP-42 Table 3.4-1 (>600 Hp)	0.006
VOC	AP-42 Table 3.4-1 (>600 Hp)	0.001
PM10	Vendor	0.001
NOx	Vendor	0.01
CO	Vendor	0.001
VOC	Vendor	0.0001

[d] As guided by AP-42 Chapter 3, Table 3.4-1, SO_2 Emission Factor is 0.00809*S_1 lb/hp-hr for diesel engines; S = sulfur content % = 0.05.

Toxic Air Pollutants Emission Factors

Pollutant	Source	Emission Factor (lb/MMBtu)	Emission Factor (lb/hp-hr)
Benzene	AP-42 Table 3.3-2 (<600 Hp)	9.33E-04	6.53E-06
Toluene	AP-42 Table 3.3-2 (<600 Hp)	4.09E-04	2.86E-06
Xylenes	AP-42 Table 3.3-2 (<600 Hp)	2.85E-04	2.00E-06
Formaldehyde	AP-42 Table 3.3-2 (<600 Hp)	1.18E-03	8.26E-06
Acetaldehyde	AP-42 Table 3.3-2 (<600 Hp)	7.67E-04	5.37E-06
PAH	AP-42 Table 3.3-2 (<600 Hp)	1.68E-04	1.18E-06
Benzene	AP-42 Table 3.4-3 (>600 Hp)	7.76E-04	5.43E-06
Toluene	AP-42 Table 3.4-3 (>600 Hp)	2.81E-04	1.97E-06
Xylenes	AP-42 Table 3.4-3 (>600 Hp)	1.93E-04	1.35E-06

Criteria Pollutants Emissions Summary

TEMPO ID	EPN	Brake Horsepower <600 or >600 Hp?	PM10			PM2.5[e]			SO2			NOx			CO			VOC		
			Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)
EQT0009	15-78	>600	0.56	0.56	0.03	0.56	0.56	0.03	0.33	0.33	0.02	19.32	19.32	0.97	4.43	4.43	0.22	0.57	0.57	0.03
EQT0011	17-78	>600	0.47	0.47	0.02	0.47	0.47	0.02	0.27	0.27	0.01	16.10	16.10	0.81	3.69	3.69	0.18	0.47	0.47	0.02
EQT0012	18-78	>600	0.60	0.60	0.03	0.60	0.60	0.03	0.35	0.35	0.02	20.64	20.64	1.03	4.73	4.73	0.24	0.61	0.61	0.03
EQT0014	20-78	<600	0.60	0.60	0.03	0.60	0.60	0.03	0.56	0.56	0.03	8.49	8.49	0.42	1.83	1.83	0.09	0.68	0.68	0.03
EQT0015	21-78	<600	0.24	0.24	0.01	0.24	0.24	0.01	0.22	0.22	0.01	3.35	3.35	0.17	0.72	0.72	0.04	0.27	0.27	0.01
EQT0018	35-88	<600	0.88	0.88	0.04	0.88	0.88	0.04	0.82	0.82	0.04	12.40	12.40	0.62	2.67	2.67	0.13	0.99	0.99	0.05
EQT0019	38-91	<600	1.10	1.10	0.06	1.10	1.10	0.06	1.03	1.03	0.05	15.50	15.50	0.78	3.34	3.34	0.17	1.24	1.24	0.06
EQT0020	5-99	>600	0.77	0.77	0.04	0.77	0.77	0.04	0.44	0.44	0.02	26.40	26.40	1.32	6.05	6.05	0.30	0.78	0.78	0.04
EQT0021	1-07	<600	1.03	1.03	0.05	1.03	1.03	0.05	0.96	0.96	0.05	14.57	14.57	0.73	3.14	3.14	0.16	1.16	1.16	0.06
EQT0022	2-07	<600	1.03	1.03	0.05	1.03	1.03	0.05	0.96	0.96	0.05	14.57	14.57	0.73	3.14	3.14	0.16	1.16	1.16	0.06
EQT0023	3-07	>600	0.47	0.47	0.02	0.47	0.47	0.02	0.27	0.27	0.01	16.10	16.10	0.81	3.69	3.69	0.18	0.47	0.47	0.02
EQT0024	4-07	>600	0.47	0.47	0.02	0.47	0.47	0.02	0.27	0.27	0.01	16.10	16.10	0.81	3.69	3.69	0.18	0.47	0.47	0.02
EQT0025	5-07	<600	0.59	0.59	0.03	0.59	0.59	0.03	0.55	0.55	0.03	8.31	8.31	0.42	1.79	1.79	0.09	0.66	0.66	0.03
EQT0026	6-07	<600	0.37	0.37	0.02	0.37	0.37	0.02	0.34	0.34	0.02	5.21	5.21	0.26	1.12	1.12	0.06	0.41	0.41	0.02
EQT0047	1-10	<600	0.64	0.64	0.03	0.64	0.64	0.03	1.07	1.07	0.05	4.99	4.99	0.25	0.62	0.62	0.03	0.07	0.07	0.003
TBD	1-16	>600	0.47	0.47	0.02	0.47	0.47	0.02	0.27	0.27	0.01	16.10	16.10	0.81	3.69	3.69	0.18	0.47	0.47	0.02

[e] Assumed PM2.5 = PM10.

Toxic Air Pollutants Emissions Summary[f]

TEMPO ID	EPN	Brake Horsepower <600 or >600 Hp?	Benzene			Toluene			Xylene			Acetaldehyde			Formaldehyde			PAH		
			Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)	Avg (lb/hr)	Max (lb/hr)	Annual (ton/yr)
EQT0009	15-78	>600	0.004	0.004	*0.0002*	0.002	0.002	*0.0001*	0.001	0.001	*0.0001*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0011	17-78	>600	0.004	0.004	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0012	18-78	>600	0.005	0.005	*0.0002*	0.002	0.002	*0.0001*	0.001	0.001	*0.0001*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0014	20-78	<600	0.002	0.002	*0.0001*	0.001	0.001	*0.00004*	0.001	0.001	*0.00003*	0.001	0.001	*0.0001*	0.002	0.002	*0.0001*	0.0003	0.0003	*0.00002*
EQT0015	21-78	<600	0.001	0.001	*0.00004*	0.0003	0.0003	*0.00002*	0.0002	0.0002	*0.00001*	0.001	0.001	*0.00003*	0.001	0.001	*0.00004*	0.0001	0.0001	*0.00001*
EQT0018	35-88	<600	0.003	0.003	*0.0001*	0.001	0.001	*0.0001*	0.001	0.001	*0.00004*	0.002	0.002	*0.0001*	0.003	0.003	*0.0002*	0.0005	0.0005	*0.00002*
EQT0019	38-91	<600	0.003	0.003	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	0.003	0.003	*0.0001*	0.004	0.004	*0.0002*	0.001	0.001	*0.00003*
EQT0020	5-99	>600	0.01	0.01	*0.0003*	0.002	0.002	*0.0001*	0.001	0.001	*0.0001*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0021	1-07	<600	0.003	0.003	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	0.003	0.003	*0.0001*	0.004	0.004	*0.0002*	0.001	0.001	*0.00003*
EQT0022	2-07	<600	0.003	0.003	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	0.003	0.003	*0.0001*	0.004	0.004	*0.0002*	0.001	0.001	*0.00003*
EQT0023	3-07	>600	0.004	0.004	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0024	4-07	>600	0.004	0.004	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.00005*	NA	NA	NA	NA	NA	NA	NA	NA	NA
EQT0025	5-07	<600	0.002	0.002	*0.0001*	0.001	0.001	*0.00004*	0.001	0.001	*0.00003*	0.001	0.001	*0.0001*	0.002	0.002	*0.0001*	0.0003	0.0003	*0.00002*
EQT0026	6-07	<600	0.001	0.001	*0.0001*	0.0005	0.0005	*0.00002*	0.0003	0.0003	*0.00002*	0.001	0.001	*0.00005*	0.001	0.001	*0.0001*	0.0002	0.0002	*0.00001*
EQT0047	1-10	<600	0.003	0.003	*0.0002*	0.001	0.001	*0.0001*	0.001	0.001	*0.0001*	0.003	0.003	*0.0001*	0.004	0.004	*0.0002*	0.001	0.001	*0.00003*
TBD	1-16	>600	0.004	0.004	*0.0002*	0.0013	0.0013	*0.00007*	0.0009	0.0009	*0.00005*	NA	NA	*NA*	NA	NA	*NA*	NA	NA	*NA*

[f] Italicized emission estimates are <0.0005 tons and therefore excluded from the EIQ sheets for these sources.

INSIGNIFICANT ACTIVITY
DAY TANK FOR STANDBY GENERATOR
(CLOVELLY DOME)

Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Source ID: **Insignificant Tanks**
Facility-wide

Fuel Type Diesel
Calculation Methodology:
EPA *TANKS 4.0.9d Program Software*
Annual Emission Rate [tpy] = TANKS Emission Report / Conversion Factor [2000 lb/ton]

Emission Calculation and Summary:

Tank ID	Tank Description	Tank Capacity [gallons]	Tank Contents	TANKS Emission Report Total VOC [lbs/yr]	Annual Emission Rate [tpy]
2-78	Fuel Tank for Emergency Generator (Clovelly Dome)	8,200	Diesel	18.20	0.01
22-78	Emer. Crude Transfer Pump Fuel Tank (Clovelly Dome)	8,200	Diesel	2.29	0.001
25-88	Tank 3 Operations Center Fuel Tank (Clovelly Dome)	550	Diesel	0.16	0.0001
26-88	Tank 4 Operations Center Tank (Clovelly Dome)	4,000	Diesel	1.16	0.0006
27-88	Tank 5 Fourchon Booster Station Tank	1,000	Diesel	0.30	0.0002
28-88	Tank 6 Fourchon Booster Station Emer. Generator Fuel Tank	322	Diesel	0.11	0.0001
29-88	Tank 7 Fourchon Booster Station Dock Fuel Tank	560	Diesel	0.16	0.0001
30-88	Tank 8 Clovelly Day Tank for Fire Pump	80	Diesel	0.02	0.00001
31-88	Tank 9 Clovelly Day Tank for Generator	116	Diesel	0.03	0.00002
32-88	Tank 10 Clovelly Underground Slop Oil Tank by Lab	2,000	Slop Oil (Crude)	17.82	0.01
34-88	Tank 12 Small Boat Harbor Tank	260	Diesel	0.07	0.00004
36-89	Day Tank for Operations Center Standby Generator (Clovelly Dome)	94	Diesel	0.06	0.00003
37-91	Small Boat Harbor Diesel Tank	564	Diesel	0.20	0.0001
38-16	Day Tank for Standby Generator (Clovelly Dome)	94	Diesel	0.06	0.00003

TANKS 4.0.9d
Emissions Report - Detail Format
Tank Indentification and Physical Characteristics

Identification

User Identification:	38-16
City:	Lafourche Parish
State:	Louisiana
Company:	LOOP LLC
Type of Tank:	Vertical Fixed Roof Tank
Description:	Day Tank for Standby Generator

Tank Dimensions

Shell Height (ft):	5.00
Diameter (ft):	2.00
Liquid Height (ft) :	4.00
Avg. Liquid Height (ft):	3.00
Volume (gallons):	94.00
Turnovers:	17.02
Net Throughput(gal/yr):	1,600.00
Is Tank Heated (y/n):	N

Paint Characteristics

Shell Color/Shade:	White/White
Shell Condition	Good
Roof Color/Shade:	White/White
Roof Condition:	Good

Roof Characteristics

Type:	Cone
Height (ft)	0.00
Slope (ft/ft) (Cone Roof)	0.06

Breather Vent Settings

Vacuum Settings (psig):	0.00
Pressure Settings (psig)	0.00

Meterological Data used in Emissions Calculations: New Orleans, Louisiana (Avg Atmospheric Pressure = 14.75 psia)

TANKS 4.0.9d
Emissions Report - Detail Format
Liquid Contents of Storage Tank

38-16 - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

Mixture/Component	Month	Daily Liquid Surf. Temperature (deg F) Avg.	Min.	Max.	Liquid Bulk Temp (deg F)	Vapor Pressure (psia) Avg.	Min.	Max.	Vapor Mol. Weight.	Liquid Mass Fract.	Vapor Mass Fract.	Mol. Weight	Basis for Vapor Pressure Calculations
Distillate fuel oil no. 2	All	69.99	64.84	75.14	68.06	0.0090	0.0077	0.0105	130.0000			188.00	Option 1: VP60 = .0065 VP70 = .009
1,2,4-Trimethylbenzene						0.0302	0.0247	0.0367	120.1900	0.0100	0.0485	120.19	Option 2: A=7.04383, B=1573.267, C=208.56
Benzene						1.5308	1.3336	1.7516	78.1100	0.0000	0.0020	78.11	Option 2: A=6.905, B=1211.033, C=220.79
Ethylbenzene						0.1524	0.1282	0.1804	106.1700	0.0001	0.0032	106.17	Option 2: A=6.975, B=1424.255, C=213.21
Hexane (-n)						2.4667	2.1671	2.7992	86.1700	0.0000	0.0004	86.17	Option 2: A=6.876, B=1171.17, C=224.41
Toluene						0.4474	0.3832	0.5204	92.1300	0.0003	0.0230	92.13	Option 2: A=6.954, B=1344.8, C=219.48
Unidentified Components						0.0077	0.0070	0.0074	134.5121	0.9866	0.8635	189.60	
Xylene (-m)						0.1273	0.1069	0.1510	106.1700	0.0029	0.0594	106.17	Option 2: A=7.009, B=1462.266, C=215.11

TANKS 4.0.9d
Emissions Report - Detail Format
Detail Calculations (AP-42)

38-16 - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

Annual Emission Calculations	
Standing Losses (lb):	0.0186
Vapor Space Volume (cu ft):	6.3486
Vapor Density (lb/cu ft):	0.0002
Vapor Space Expansion Factor:	0.0391
Vented Vapor Saturation Factor:	0.9990
Tank Vapor Space Volume:	
Vapor Space Volume (cu ft):	6.3486
Tank Diameter (ft):	2.0000
Vapor Space Outage (ft):	2.0208
Tank Shell Height (ft):	5.0000
Average Liquid Height (ft):	3.0000
Roof Outage (ft):	0.0208
Roof Outage (Cone Roof)	
Roof Outage (ft):	0.0208
Roof Height (ft):	0.0000
Roof Slope (ft/ft):	0.0625
Shell Radius (ft):	1.0000
Vapor Density	
Vapor Density (lb/cu ft):	0.0002
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0090
Daily Avg. Liquid Surface Temp. (deg. R):	529.6574
Daily Average Ambient Temp. (deg. F):	68.0375
Ideal Gas Constant R (psia cuft / (lb-mol-deg R)):	10.731
Liquid Bulk Temperature (deg. R):	527.7275
Tank Paint Solar Absorptance (Shell):	0.1700
Tank Paint Solar Absorptance (Roof):	0.1700
Daily Total Solar Insulation Factor (Btu/sqft day):	1,443.5256
Vapor Space Expansion Factor	
Vapor Space Expansion Factor:	0.0391
Daily Vapor Temperature Range (deg. R):	20.5932
Daily Vapor Pressure Range (psia):	0.0028
Breather Vent Press. Setting Range(psia):	0.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0090
Vapor Pressure at Daily Minimum Liquid Surface Temperature (psia):	0.0077
Vapor Pressure at Daily Maximum Liquid Surface Temperature (psia):	0.0105
Daily Avg. Liquid Surface Temp. (deg R):	529.6574
Daily Min. Liquid Surface Temp. (deg R):	524.5091
Daily Max. Liquid Surface Temp. (deg R):	534.8057
Daily Ambient Temp. Range (deg. R):	19.0583
Vented Vapor Saturation Factor	
Vented Vapor Saturation Factor:	0.9990
Vapor Pressure at Daily Average Liquid: Surface Temperature (psia):	0.0090
Vapor Space Outage (ft):	2.0208

Working Losses (lb):	0.0446
Vapor Molecular Weight (lb/lb-mole):	130.0000
Vapor Pressure at Daily Average Liquid Surface Temperature (psia):	0.0090
Annual Net Throughput (gal/yr.):	1,600.0000
Annual Turnovers:	17.0207
Turnover Factor:	1.0000
Maximum Liquid Volume (gal):	94.0033
Maximum Liquid Height (ft):	4.0000
Tank Diameter (ft):	2.0000
Working Loss Product Factor:	1.0000
Total Losses (lb):	0.0632

TANKS 4.0.9d
Emissions Report - Detail Format
Individual Tank Emission Totals

Emissions Report for: Annual

38-16 - Vertical Fixed Roof Tank
Lafourche Parish, Louisiana

	Losses(lbs)		
Components	Working Loss	Breathing Loss	Total Emissions
Distillate fuel oil no. 2	0.04	0.02	0.06
Hexane (-n)	0.00	0.00	0.00
Benzene	0.00	0.00	0.00
Toluene	0.00	0.00	0.00
Ethylbenzene	0.00	0.00	0.00
Xylene (-m)	0.00	0.00	0.00
1,2,4-Trimethylbenzene	0.00	0.00	0.00
Unidentified Components	0.04	0.02	0.05

GCXVII ACTIVITY
PORTABLE THERMAL OXIDIZER DURING TANK CLEANING

Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Source ID: **GCXVII Activity**
Source Description: **PORTABLE THERMAL OXIDIZER DURING TANK CLEANING**

Emission Calculation and Summary:

Hours operated per day	10	
Number of days per cleaning	30	
Total hours operated per year	600	
Total Loaded	76.94	tpy
Benzene Heating Value	18,400	Btu/Lb
Degassing Heat Duty	4.72	MMBtu/hr
Natural Gas Fuel	363	scfm
NG Heat Value	1,020	Btu/scf
NG Heat Duty	22.22	MMBtu/hr
Total Heat Duty	26.93	MMBtu/hr

Combustion Pollutant	**Emission Factor (lb/MMBtu)**	**lbs/hr**	**TPY**
Carbon Monoxide	0.08	2.22	0.67
Nitrogen Oxides	0.10	2.64	0.79
Sulfur Dioxide	0.001	0.02	0.005
PM_{10}	0.01	0.20	0.06
$PM_{2.5}$	0.01	0.20	0.06

Note: Emission factors taken from AP-42, Table 1.4-1 (7/98). There is no published emission factor for emissions of $PM_{2.5}$. As a conservative measure, $PM_{2.5}$ emissions are assumed to be 100% of PM_{10} emissions.

APPENDIX B

ENVIRONMENTAL ASSESSMENT STATEMENT

Note that an EAS was submitted with the December 2014 application that initially proposed the Clovelly Tank Facility Crude Oil Storage Tank Project to construct six tanks. The modified project includes an additional five tanks to be constructed for a total of eleven tanks.

Environmental Assessment Statement

1. **Have the potential and real adverse environmental effects of the proposed facility been avoided to the maximum extent possible?**

Yes. The LOOP LLC - Port Complex currently operates under Title V Permit No. 1560-00027-V1. This application includes the addition of five crude oil storage tanks, to be permitted under the existing crude oil storage tank CAP.

The potential and real adverse environmental effects of the proposed project have been avoided to the maximum extent possible. As discussed below, the facility is not anticipated to have any adverse environmental impacts.

The potential impacts from air emissions from the facility are minimal and will not cause any adverse impacts. All applicable federal and state regulations are complied with within a timely manner and are utilized to minimize air emissions.

2. **Does a cost benefit analysis of the environmental impact costs balanced against the social and economic benefits of the proposed facility demonstrate that the latter outweighs the former?**

Yes. The social and economic benefits of the LOOP LLC – Port Complex greatly outweigh its environmental impact. The facility is subject to strict requirements to control air emissions. Controls are in place to prevent any other environmental media from being affected by the facility's operations. The LOOP LLC – Port Complex is not anticipated to have an adverse impact on the environment. The facility has significant social and economic benefits, on a local and national scale, with minimal environmental impact.

3. **Are there alternative projects which would offer more protection to the environment than the proposed facility without unduly curtailing non-environmental benefits?**

No. The proposed project is planned for the existing LOOP LLC – Port Complex. There are no alternative projects (i.e., technologies) which would offer more protection to the environment than the proposed project without unduly curtailing non-environmental benefits.

4. **Are there alternative sites which would offer more protection to the environment than the proposed facility site without unduly curtailing non-environmental benefits?**

No. It is an existing facility which is zoned for industrial use. Any other site would not offer more protection to the environment than the proposed project site without unduly curtailing non-environmental benefits.

5. **Are there mitigating measures which would offer more protection to the environment than the facility as proposed without unduly curtailing non-environmental benefits?**

No. There are no mitigating measures which would offer more protection to the environment than the project as proposed without unduly curtailing non-environmental benefits. The facility meets all state and federally applicable requirements to minimize emissions of regulated air pollutants. Emissions associated with operations at the facility have been minimized.

Qingming Zhang

From: Kerry D. Brouillette <kerry.brouillette@c-ka.com>
Sent: Thursday, September 15, 2016 2:14 PM
To: Qingming Zhang
Subject: LOOP Permit items
Attachments: LOOP Flex Paragraph.docx

Qingming,

Please see attached for paragraph explaining the number of landing LOOP has permitted as it pertains to business needs. Flexibility to meet customer demand for storage and movements is primary for LOOP.

Please let me know if you have any questions.

Kerry Brouillette
Air Quality Program Manager
CK ASSOCIATES
Environmental Consultants
17170 Perkins Road
Baton Rouge, LA 70810
225-755-1000 Office
225-923-6437 Direct
225-223-0972 Cell
www.c-ka.com

The Louisiana Offshore Oil Port (LOOP) storage facilities in Clovelly, Louisiana continuously receive and distribute crude oil. LOOP facilitates movement of various crude oils from different parts of the world, as well as specific crudes from oil fields in the Gulf of Mexico and the continental United States.

The primary business of the Clovelly Tank Facility is to provide a means for customers to distribute products from producers to customers quickly. The above ground tanks operated at the facility are strategic to segregate specialty grades of crude oil for LOOP's customers. Customers with unique requirements can isolate their supplies and protect the quality specifications of the crude oil sent to refineries.

The tanks have floating roofs and efficient bottoms, allowing them to be emptied and handle varying grades of crude oil. The nature of LOOP's business requires that the facility's aboveground tanks are able to be emptied and filled frequently to meet customer demand for movements of differing grades of crude.

The ability to drain the tanks of one type of crude in order to re-fill with a differing type of crude is a critical process step required to maintain the quality of the crude variety without contamination. Maintaining quality reflects directly to the end user (refiner's) ability to maintain a ratable and efficient refining operation (typical crude oil quality characteristics to protect include sulfur content, water content and specific gravity).

The current Title V permit allows 90 landings and the current Title V application is not proposing to change this number. This number of landings gives LOOP the flexibility to accommodate their customers' needs for crude oils with varying compositions.

Qingming Zhang

From: Kerry D. Brouillette <kerry.brouillette@c-ka.com>
Sent: Thursday, September 15, 2016 2:28 PM
To: Qingming Zhang
Subject: LOOP Clovelly Storage GHG Emissions Summary
Attachments: LOOP Clovelly GHG Emissions Summary.pdf

Qingming,

Please see attached for GHG emissions from fuel burning equipment at the Clovelly Dome site (AI 4634).

Please let me know if you have any questions.

Kerry Brouillette
Air Quality Program Manager
CK Associates
Environmental Consultants
17170 Perkins Road
Baton Rouge, LA 70810
225-755-1000 Office
225-923-6437 Direct
225-223-0972 Cell
www.c-ka.com

Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Engine Data

TEMPO ID	EPN	Description	Fuel Type	Brake Hp	Annual Operating Hours	Specific Fuel Consumption (Btu/hp-hr)[a,d]	Heat Input (MMBtu/hr)[b]	Annual Heat Rate (MMBtu/yr)[c]
EQT0009	15-78	Fourchon Booster Station - Standby Generator	Diesel	805	100	7,000	5.64	564
EQT0011	17-78	Operations Center Standby Generator	Diesel	671	100	7,000	4.70	470
EQT0012	18-78	Emergency Crude Transfer Pump (Clovelly Dome)	Diesel	860	100	7,000	6.02	602
EQT0014	20-78	Clovelly Fire Pump	Diesel	274	100	7,000	1.92	192
EQT0015	21-78	Standby Generator - Brine Storage Reservoir (Clovelly Dome)	Diesel	108	100	7,000	0.76	76
EQT0018	35-88	Fire School Pump (Clovelly Dome)	Diesel	400	100	7,000	2.80	280
EQT0019	38-91	Operations Center - Fire Pump (Clovelly Dome)	Diesel	500	100	7,000	3.50	350
EQT0020	5-99	Crude Oil Tankfarm Firewater Pump (Clovelly Dome)	Diesel	1,100	100	7,000	7.70	770
EQT0021	1-07	470 bhp Emergency Generator (Small Boat Harbor)	Diesel	470	100	7,000	3.29	329
EQT0022	2-07	470 bhp Emergency Generator (Tank Facility)	Diesel	470	100	7,000	3.29	329
EQT0023	3-07	671 bhp Emergency Generator (Clovelly Dome)	Diesel	671	100	7,000	4.70	470
EQT0024	4-07	671 bhp Emergency Generator (Clovelly Control Room)	Diesel	671	100	7,000	4.70	470
EQT0025	5-07	268 bhp Emergency Generator (OC Warehouse)	Diesel	268	100	7,000	1.88	188
EQT0026	6-07	168 bhp Emergency Generator (LOCAP)	Diesel	168	100	7,000	1.18	118
EQT0047	1-10	520 hp Emergency Generator	Diesel	520	100	6,496	3.38	338
TBD	1-16	Standby Generator (Clovelly Dome)	Diesel	671	100	7,000	4.70	470

[a] Given that specific data is unavailable for these engines (except for EPN 1-10), this calculation uses the average brake-specific fuel consumption from AP-42 Table 3.3-1, Footnote a

[b] calculated; (Btu/hp-hr * hp) / 1,000,000 (except for EPN 20-78 for which the Hp is back-calculated

[c] calculated; MMBtu/hr * hr/yr

[d] For EPN 1-10, the Specific Fuel Consumption is calculated as follows: 24.3 gal/hr / 520 Hp * 139,000 Btu/gal. The fuel consumption (gal/hr) is per LOOP and the Btu/gal for diesel was taken from http://www.engineeringtoolbox.com/energy-content-d_868.htm

Greenhouse Gas Emission Factors

Pollutant	Global Warming Potential[g]	Emission Factor[h] (kg/MMBtu)
CO_2	1	73.96
CH_4	25	3.0E-03
N_2O	298	6.0E-04
CO_2e	-	-

[g] Default global warming potentials from 40 CFR 98 Subpart A, Table A-1.

[h] Default emission factors from 40 CFR 98 Subpart C, Tables C-1 and C-2, for diesel.

Greenhouse Gas Emissions Summary

		CO2			CH4			N2O			CO2e		
TEMPO ID	EPN	(metric tpy)[i]	(short tpy)[j]	(lb/hr)	(metric tpy)[i]	(short tpy)[j]	(lb/hr)	(metric tpy)[i]	(short tpy)[j]	(lb/hr)	(metric tpy)[i]	(short tpy)[j]	(lb/hr)
EQT0009	15-78	42	46	919	0.04	0.05	1	0.1	0.1	2	42	46	922
EQT0011	17-78	35	38	766	0.04	0.04	1	0.1	0.1	2	35	38	768
EQT0012	18-78	45	49	982	0.05	0.05	1	0.1	0.1	2	45	49	985
EQT0014	20-78	14	16	313	0.01	0.02	0.3	0.03	0.04	1	14	16	314
EQT0015	21-78	6	6	123	0.01	0.01	0.1	0.01	0.01	0.3	6	6	124
EQT0018	35-88	21	23	457	0.02	0.02	0.5	0.1	0.1	1	21	23	458
EQT0019	38-91	26	29	571	0.03	0.03	1	0.1	0.1	1	26	29	573
EQT0020	5-99	57	63	1256	0.06	0.06	1	0.1	0.2	3	57	63	1260
EQT0021	1-07	24	27	536	0.02	0.03	1	0.1	0.1	1	24	27	538
EQT0022	2-07	24	27	536	0.02	0.03	1	0.1	0.1	1	24	27	538
EQT0023	3-07	35	38	766	0.04	0.04	1	0.1	0.1	2	35	38	768
EQT0024	4-07	35	38	766	0.04	0.04	1	0.1	0.1	2	35	38	768
EQT0025	5-07	14	15	306	0.01	0.02	0.3	0.03	0.04	1	14	15	307
EQT0026	6-07	9	10	192	0.01	0.01	0.2	0.02	0.02	0.5	9	10	192
EQT0047	1-10	25	28	551	0.03	0.03	1	0.1	0.1	1	25	28	553
TBD	1-16	35	38	766	0.04	0.04	1	0.1	0.1	2	35	38	768

[i] Calculated by using 40 CFR 98 Subpart C Equation C-1b.

[j] Calculated by multiplying metric tons per year by 1.10231 short tons/metric ton, as per 40 CFR 98 Subpart A, Table A-2

JOHN BEL EDWARDS
GOVERNOR

CHUCK CARR BROWN, PH.D.
SECRETARY

State of Louisiana

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL SERVICES

Certified Mail No.: 7005 0390 0001 6874 9197

Chris A. Labat
Vice President of Engineering and Technology
LOOP LLC
137 Northpark Drive
Covington, Louisiana 70433

RE: **Expedited Permit Processing Request**, LOOP LLC
Deepwater Port Complex
Cut Off, Lafourche Parish, Louisiana
TEMPO Activity Nos.: PER20160001, PER20160002
Agency Interest No.: 4634

Dear Mr. Labat:

The Department received your request dated June 9, 2016, on June 10, 2016, for expedited permit review in accordance with LAC 33:I.Chapter 18. After review of your request for a Title V modification and PSD modification, a preliminary review of the application received June 10, 2016, the workforce available for expedited processing, and the current fee status and compliance history for LOOP LLC, the Department hereby approves your request for expedited processing. You requested a date for final permit decision as soon as possible. While the Department will endeavor to process your permit application as quickly as possible, approval of a request for expedited permit processing in no way guarantees issuance of the permit action or issuance by the date requested.

Please be advised that this approval is contingent upon timely submittal of information in response to requests for additional permit application information in accordance with LAC 33:I.1803.D. This approval may be withdrawn or suspended as outlined in LAC 33:I.1803.D.3 or in the event that Departmental resources are such that the request can no longer be processed as an expedited permit.

After the Department has made a final determination on the permit application, you will receive a bill for the full amount owed to the Department for this expedited permit action.

Please include reference to the Agency Interest (AI) No. 4634 and TEMPO Activity No. PER20160001 in all future correspondence regarding this permitting action.

If you have any questions or need additional information concerning the permit application, please contact Qingming Zhang, the permit writer assigned to this action, at (225) 219-3457. For questions related to billing, please contact Theresa Chatelain at (225) 219-3861.

Donald Trahan

Donald Trahan
Administrator

June 16, 2016
Date

DT:KWF

Qingming Zhang

From: Kerry D. Brouillette <kerry.brouillette@c-ka.com>
Sent: Friday, September 16, 2016 4:18 PM
To: Qingming Zhang
Subject: LOOP EPA Comment Responses on BACT
Attachments: LOOP EPA BACT Responses per Comments.docx

Qingming,

This should be the last of the information needed for draft permit issuance. Please let me know if you come across other items which we can help address as you complete the draft permit.

Thank you.

Kerry Brouillette
Air Quality Program Manager

17170 Perkins Road
Baton Rouge, LA 70810
225-755-1000 Office
225-923-6437 Direct
225-223-0972 Cell
www.c-ka.com

Comment: Evaluate CVS as control for the proposed crude oil storage tanks

The VOC BACT evaluation for Floating Roof Tank Landings from the December 2014 application was presented as shown below.

> ***Step 4 – Evaluate Most Effective Controls***
>
> *If a closed vent system and control device is used for emissions control, capital cost, installation, and operation of a flare would be evaluated with the emissions reduced from the proposed EFR tank option. Although the application of a CVS and control device has not been demonstrated for an EFR, we can assume that technically it can be done for the purposes of a cost effectiveness analysis. Based on a quote from the John Zinc Company, an installed combustor having a 98% destruction efficiency has an annualized cost of $471,667. Landing emissions are similar between the existing larger tanks and proposed smaller diameter tanks. The proposed tanks are projected to have one (1) additional landing annually than the existing tanks and therefore, these tanks represent the worst-case condition. Each proposed EFR tank in this project is projected to have landing emissions of 16.10 tpy (5 landings at 6,439 pounds per landing). Applying the 98% control efficiency, the reduction in emissions would equate to 15.78 tpy, thus the CVS plus control device option yields a cost effectiveness of $29,890 per ton controlled. Note that this cost does not take into consideration the engineering and installation of a capture system to route the vapors during a landing event to the control device. Due to the economics, environmental, and energy impacts, and the consideration that the technology has not been demonstrated on an EFR tank, the CVS and control device is considered to be an infeasible control option. Therefore, it is eliminated from further consideration for VOC emission control of the proposed tanks.*
>
> *Limiting the amount of time that the floating roof is landed and complying with 40 CFR 60.112b(a)(2)(iii) is an effective way to minimize the emissions during a roof landing event.*

It has been noted that a CVS has been demonstrated for the control of emissions from storage tanks and that a common control device could be used for all tanks operated. The use of a flare or other means of destruction of VOC emissions for tanks is common in industry. However, for crude oil storage, fixed roof tanks are not common in use and represent a very inefficient way to store product as losses are very high and result in unnecessary secondary emissions. The project proposes the EFR tanks for crude oil

storage and a BACT analysis revealed that it was not cost effective to use IFR tanks. As a result, the project is for the construction of floating roof tanks and not for the construction of fixed roof tanks. Without an enclosure such as a fixed roof tank which can collect and vent vapors to a control device, then the option of a CVS becomes technically infeasible as to enclose an EFR effectively makes the tank a fixed roof tank which is not the project specification. LOOP has years of experience in the practice of operating and maintaining floating roof tanks and does not wish to have multiple scenario tank operating requirements to have to incorporate into standard and emergency planning.

Comment: Evaluate Cost of VOC Control Due to Landings

The changes presented in the June 2016 application include the addition of four 600K BBL storage tanks as well as one 371K BBL storage tank. However, the proposed number of tank roof landings is not being changed. Therefore, the average number of landings and associated emissions per tank is reduced. This results in an increase in cost per ton controlled for each tank as noted in Table 1 below. The result is that control of landing loss emissions remains not cost effective and the initial BACT determination of no additional remains.

Table 1 – Cost Effectiveness Analysis

Tank Size (BBL)	Number of Tanks	Roof Landings Per Tank	Total Roof Landings	VOC Emissions Per Landing (lb)	Uncontrolled Annual VOC Emissions Per Tank (TON)	Control Efficiency (%)	VOC Reduction (TON)	Combustor Cost	Cost Per Ton
December 2014 Application									
600K	15	4	60	6,550	13.1	98	12.84	$471,667	$36,740
371K	6	5	30	6,439	16.10	98	15.78	$471,667	$29,899
June 2016 Application									
600K	19	3.2	60	6,550	10.34	98	10.14	$471,667	$46,537
371K	7	4.3	30	6,439	13.8	98	13.52	$471,667	$34,882

Qingming Zhang

From: Jennifer F. Brouillette <jennifer.brouillette@c-ka.com>
Sent: Friday, September 23, 2016 3:14 PM
To: Qingming Zhang
Cc: Kerry D. Brouillette
Subject: AI# 4634
Attachments: LOOP Fug Calc 092316.pdf; Section 12.pdf

Activity No. PER20160001
AI No. 4634
LOOP Port Complex

Qingming,

As we discussed, please find attached a reconciled emissions estimate for the fugitives emissions source as well as a revised EIQ sheet and an updated Section 12 from the application form.

Please let me know if you have any questions.

Thank you,

Jennifer F. Brouillette
Environmental Scientist

CK ASSOCIATES
Environmental Consultants

17170 Perkins Road
Baton Rouge, LA 70810
Office: 225-755-1000
Direct Line:225-923-6449
Mobile: Web: www.c-ka.com

Potential to Emit

LOOP LLC Port Complex
Lafourche Parish, Louisiana

Source ID: **FUG001**
10-78 Fugitive Emissions

Given:

Component Type	Service	Component Count
valves	Heavy liquid (HL)	195
pump seals	Heavy liquid (HL)	156
flanges	Heavy liquid (HL)	1,209

Note: Component counts were increased by 30% to account for additional tanks.

Calculation Methodology:
VOC Average Hourly Rate [lb/hr] = API Emission Factor [kg/component-hr] x Component Count * Conversion Factor [2.20462 lb/kg]
VOC TAP Speciate Hourly Rate [lb/hr] = Liquid Mass Fraction x Total VOC Average Hourly Rate [lb/hr]
Max Hourly Rate [lb/hr] = Average Hourly Rate [lb/hr]
Annual Emission Rate [tpy] = Average Hourly Rate [lb/hr] / Conversion Factor [2000 lb/ton] x Annual Operating Hours

Reference:
Emission Factors for Oil and Gas Production Operations , Table 9, Publication Number 4615, American Petroleum Institute, January 1995

Emission Calculation:

Component Type	Heavy Crude Emission Factor [kg/component-hr]	Average Hourly Rate [lb/hr]	Max Hourly Rate [lb/hr]	Annual Emission Rate [tpy]
valves	0.000013	0.01	0.01	0.02
pump seals	NA	--	--	--
flanges	0.000022	0.06	0.06	0.26
	Total VOC	**0.06**	**0.06**	**0.28**

VOC TAP Speciation	Liquid Mass Fraction[(1)]	Average Hourly Rate [lb/hr]	Max Hourly Rate [lb/hr]	Annual Emission Rate [tpy]
Benzene	0.0060	0.0004	0.0004	0.0017
Ethylbenzene	0.0040	0.0003	0.0003	0.0011
n-Hexane	0.0040	0.0003	0.0003	0.0011
Toluene	0.0100	0.001	0.001	0.0028
Xylenes	0.0140	0.001	0.001	0.0039
Cumene (Isopropyl benzene)	0.0010	0.0001	0.0001	0.0003
Iso-octane	0.0010	0.0001	0.0001	0.0003

Notes:
(1) VOC TAP Speciation Profile from TANKS 4.09.d for Crude Oil (RVP 8).

State of Louisiana
Emissions Inventory Questionnaire (EIQ) for Air Pollutants

Date of submittal: Sept 2016

Emission Point ID No. (Designation)	Descriptive Name of the Emissions Source (Alt. Name)	Approximate Location of Stack or Vent (see instructions)
10-78	Fugitive Emissions (Clovelly Dome)	Method 27,"Unknown" Datum NAD27
Tempo Subject Item ID No.		UTM Zone 15 Horizontal mE Vertical mN
FUG0001		Latitude ° ' " hundredths
		Longitude ° ' " hundredths

Stack and Discharge Physical Characteristics Change? (yes or no)	Diameter (ft) or Stack Discharge Area (ft^2)	Height of Stack Above Grade (ft)	Stack Gas Exit Velocity	Stack Gas Flow at Process Conditions, not at Standard (ft^3/min)	Stack Gas Exit Temperature (°F)	Normal Operating Time (hours per year)	Date of Construction or Modification	Percent of Annual Throughput Through This Emission Point			
								Jan-Mar	Apr-Jun	Jul-Sep	Oct-Dec
no	N/A ft	N/A ft	N/A ft/sec	N/A ft^3/min	N/A °F	8,760 hr/yr	constructed	25%	25%	25%	25%
	ft^2										

Fuel	Type of Fuel Used and Heat Input (see instructions)		
		Type of Fuel	Heat Input (MMBTU/hr)
	a		
	b		
	c		

Notes

Operating Parameters (include units)	Parameter	Description
Normal Operating Rate/Throughput		
Maximum Operating Rate/Throughput		
Design Capacity/Volume/Cylinder Displacement		
Shell Height (ft)		
Tank Diameter (ft)		

Tanks:	Fixed Roof	Floating Roof	External	Internal

Date Engine Ordered			Engine Model Year	
Date Engine Was Built by Manufacturer				

SI Engines:	Rich Burn	Lean Burn	2 Stroke	4 Stroke

Emission Point ID No. (Designation)	Control Equipment Code	Control Equipment Efficiency	HAP / TAP CAS Number	Proposed Emission Rates			Permitted Emission Rate (Current)	Add, Change, Delete, or Unchanged	Continuous Compliance Method	Concentration in Gases Exiting at Stack
10-78										
Pollutant				Average (lb/hr)	Maximum (lbs/hr)	Annual (tons/yr)	Annual (tons/yr)			
Total VOC (including those listed below)				0.06	0.06	0.28	<0.01	C		ppm by vol
Benzene			00071-43-2	<0.001	<0.001	<0.01		A		ppm by vol
Ethyl benzene			00100-41-4	<0.001	<0.001	<0.01		A		ppm by vol
n-Hexane			00110-54-3	<0.001	<0.001	<0.01		A		ppm by vol
Toluene			00108-88-3	<0.001	<0.001	<0.01		A		ppm by vol
Xylene (mixed isomers)			01330-20-7	<0.001	<0.001	<0.01		A		ppm by vol

12. Proposed Project Emissions [LAC 33:III.517.D.3]

List the total emissions following the proposed project for this facility or process unit (for process unit-specific permits). Speciate all criteria pollutants, TAP, and HAP for the proposed project.

Pollutant	Proposed Emission Rate (tons/yr)
PM_{10}	0.50
$PM_{2.5}$	0.50
SO_2	0.43
NO_x	10.94
CO	2.41
VOC	418.26
2,2,4-Trimethylpentane	0.22
Benzene	2.49
Cumene	0.04
Ethylbenzene	0.27
n-Hexane	2.61
Toluene	1.37
Xylene	0.79

AI# 4634
PER20160001
PER20160002

MAIN FILE original to JOA
copy to Petro Thomas

10. Certification of Compliance With Applicable Requirements

Statement for Applicable Requirements for Which the Company and Facility Referenced In This Application Is In Compliance

Based on information and belief, formed after reasonable inquiry, the company and facility referenced in this application is in compliance with and will continue to comply with all applicable requirements pertaining to the sources covered by the permit application, as outlined in Tables 1 and 2 in the permit application. For requirements promulgated as of the date of this certification with compliance dates effective during the permit term, I further certify that the company and facility referenced in this application will comply with such requirements on a timely basis and will continue to comply with such requirements.

For corporations only: By signing this form, I certify that, in accordance with the definition of Responsible Official found in LAC 33:III.502, **(1)** I am a president, secretary, treasurer, or vice-president in charge of a principal business function, or other person who performs similar policy or decision-making functions; or **(2)** I am a duly authorized representative of such person; am responsible for the overall operation of one or more manufacturing, production, or operating facilities addressed in this permit application; and either the facilities employ more than 250 persons or have gross annual sales or expenditures exceeding $25 million (in second quarter 1980 dollars); or the delegation of authority has been approved by LDEQ prior to this certification.*

CERTIFICATION: I certify, under provisions in Louisiana and United States law which provide criminal penalties for false statements, that based on information and belief formed after reasonable inquiry, the statements and information contained in this Application for Approval of Emissions of Air Pollutants from Part 70 Sources, including all attachments thereto and the compliance statement above, are true, accurate, and complete.

a. Responsible Official		
Name Chris A. Labat		
Title Vice President of Engineering and Technology		
Company LOOP LLC		
Suite, mail drop, or division		
Street or P.O. Box 137 Northpark Boulevard		
City Covington	State LA	Zip 70433
Business phone 985-276-6235		
Email Address calabat@loopllc.com		

Signature of responsible official (See 40 CFR 70.2):
Date:

*Approval of a delegation of authority can be requested by completing a Duly Authorized Representative Designation Form (Form_7218) available on LDEQ's website at http://www.deq.louisiana.gov/portal/tabid/2758/Default.aspx

CERTIFICATION: I certify that the engineering calculations, drawings, and design are true and accurate to the best of my knowledge.

RECEIVED
JUN 15 2016
By

b. Professional Engineer		
Name Vinh Nguyen		
Title Project Engineer		
Company CK Associates		
Suite, mail drop, or division		
Street or P.O. Box 17170 Perkins Road		
City Baton Rouge	State LA	Zip 70810
Business phone 225-755-1000		
Email Address vinh.nguyen@c-ka.com		

Signature of Professional Engineer: Vinh
Date: 7/14/2016
Louisiana Registration No. 24402

STATE OF LOUISIANA
VINH T. NGUYEN
REG. NO. 24402
REGISTERED PROFESSIONAL ENGINEER IN CHEMICAL ENGINEERING